SESSIONAL PAPERS

VOL. XLIX.—PART II.

THIRD SESSION

OF THE

FOURTEENTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO

(And 3 maps in separate envelope
& accompanying Sess. pap. No 41, 1917)

SESSION 1917

148204
4/2/19

TORONTO:
Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1917

Printed by
WILLIAM BRIGGS,
Corner Queen & John Sts.,
Toronto.

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No. 4 Report of the Bureau of Mines for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 5 Report of the Inspector of Division Courts for the year 1916. Presented to the Legislature, March 2nd, 1917. *Printed.*

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No. 8 Report of the Provincial Municipal Auditor for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

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No. 12 Loan Corporations' Statements, being Financial Statements made by Building Societies, Loan Companies, Loaning, Land and Trust Companies for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

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No. 16 Report of the Bureau of Labour for the year 1916. Presented to the Legislature, April 6th, 1917. *Not Printed.*

No. 17 Report of the Department of Education for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 18 Report of the Board of Governors of the University of Toronto for the year 1916. Presented to the Legislature, February 20th, 1917. *Printed.*

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No. 27 Report upon the Neglected and Dependent Children of the Province for the year 1916. Presented to the Legislature, April 6th, 1917. *Not Printed.*

No. 28 Report upon the operation of the Liquor License Acts in the Province for the year 1916. Presented to the Legislature, March 2nd, 1917. *Printed.*

No. 29 Report of the Department of Agriculture for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 30 Report of the Ontario Agricultural College and Experimental Farm for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 31 Report of the Ontario Veterinary College for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 32 Report of the Ontario Agricultural and Experimental Union for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 33 Report of the Ontario Corn Growers' Association for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 34 Report of the Ontario Vegetable Growers' Association for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 35 Report of the Bee-Keepers' Association for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

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No. 45 Report of the Bureau of Industries of the Province for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

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No. 51 Report of the Bureau of Archives for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

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No. 53 Report of the Provincial Auditor for the year 1916. Presented to the Legislature, February 22nd, 1917. *Printed.*

No. 54 Report of the Workmen's Compensation Board for the year 1916. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 55 Report of the British Red Cross Fund for the year 1916. Presented to the Legislature, March 2nd, 1917. *Printed.*

No. 56 Report upon the Monteith Demonstration Farm for the year 1916 Presented to the Legislature, April 6th, 1917. *Printed.*

No. 57 Report of the Commission to investigate the administration, management, progress and welfare of the Ontario School for the Blind Presented to the Legislature, February 20th, 1917. *Printed.*

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No. 59 Statement as to distribution of the Revised and Sessional Statutes for the year 1916. Presented to the Legislature, February 20th, 1917. *Not printed.*

No. 60 Return to an Order of the House of April 19th, 1916, that there be laid before the House:—A Return shewing, 1. If the T. & N. O. Railway quoted any special rate not authorized by its tariff or has been a party to the quotation of a special rate from any point or points in Ontario or Western Canada. 2. If so, to what shipper or shippers has such rate been given. Presented to the Legislature, February 20th, 1917. Mr. *Munro.* *Not Printed.*

No. 61 Copies of Orders-in-Council made under the authority of the Department of Education Act, or of the Acts relating to Public Schools, Separate Schools or High Schools. Presented to the Legislature, February 20th, 1917. *Not Printed.*

No. 62 Report of the Nickel Commission. Presented to the Legislature, March 26th, 1917. *Printed.*

No. 63 Return of an Address to His Honour the Lieutenant-Governor of the 16th February, 1917, praying that he will cause to be laid before this House, a Return:—1. Shewing all correspondence

(including telegrams) since January 1st, 1916, passing between the Government of the Province of Ontario or any member, officer or official thereof, and the Government of the Dominion of Canada and any officer or official thereof in reference to the machine guns purchased out of the moneys of the Province of Ontario. 2. All correspondence since January 1st, 1916, passing between the Government of the Province of Ontario, or any member, officer or official thereof, and the Imperial Government, and any officer or official thereof, in reference to machine guns purchased out of the moneys of the Province of Ontario. Presented to the Legislature, March 1st, 1917. Mr. *Bowman. Not Printed.*

No. 64 Return to an Order of the House of the 26th February, 1917, for a Return shewing:—1. How many charters or licenses have been issued to racing associations operating in Ontario since the year 1912. 2. What are the names of the racing associations or companies and the dates of the issue of the licenses or charters respectively. Presented to the Legislature, March 1st, 1917. Mr. *Carter. Printed.*

No. 65 Return to an Address to His Honour the Lieutenant-Governor of the 11th April, 1916, praying that he will cause to be laid before this House a Return shewing:—1. Copies of all letters or telegrams, since the 1st January, 1915, which have passed between the Government or any official or agent thereof, and the International Nickel Company or the Canadian Copper Company or any officers or officials thereof, in reference to the damages done to the property of the farmers and others interested in the lands adjacent to the plant of the Canadian Copper Company. 2. Of all letters and telegrams which have passed between the Government, or any officer or official thereof—and particularly the Departments of Lands, Forests and Mines and of Agriculture—and Mr. Chas. McCrea, M.P.P., of Sudbury, in reference to the matters aforesaid or the operations of the International Nickel Company or the Canadian Copper Company, and the damage being done to the property in the vicinity of the operations of the said companies; and particularly the correspondence between either of the Departments and Mr. McCrea and Mr. Ponton and Mr. Jarvis, Valuators for the Canadian Copper Company. 3. Of all Orders in Council withdrawing lands from sale for agricultural purposes, at the instance or suggestion of the Canadian Copper Company. Presented to the Legislature, March 2nd, 1917. Mr. *Carter, Printed.*

No. 66 Return to an Order of the House of the 19th February, 1917 for a Return shewing how many patients were regularly cared for in the Whitby Asylum during the year 1916. Presented to the Legislature, March 2nd, 1917. Mr. *Wigle. Printed.*

No. 67 Return to an Order of the House of the 23rd February, 1917, for a Return of copies, 1. Of the pay-rolls of the Industrial Department of the Reformatory for the Porvince of Ontario, commencing November 1st, 1915, and ending October 31st, 1916, specifying the nature of the services rendered by those whose names appear in the Return. 2. Of the monthly payments by the Industrial Department of the Reformatory for the Province of Ontario to persons whose names do not appear upon the monthly pay-roll of the Industrial Department, specifying the nature of the services rendered by those whose names appear in the Return. Presented to the Legislature, March 2nd, 1917. Mr. *Bowman*. *Not Printed.*

No. 68 Return to an Order of the House of the 3rd April, 1916, for a Return shewing: 1. The number of acres occupied by *bona fide* settlers on the lands purchased from the Government by Willis K. Jackson *et al.* under agreement bearing date the 14th day of June, 1912, particularizing the number of acres occupied each year since the date of the said agreement. 2. The number of settlers occupying such lands since the date of such agreement and the number respectively occupying the same for each year since the date of said agreement and the number of acres occupied by each settler. 3. The number of settlers who have lived up to the requirements of The Free Grant and Homestead Act and the regulations thereunder, and the number in default. 4. The number of farms required to be cleared by the Minister under Clause 4 of said agreement, and the actual number of such farms cleared, the amount of work performed, and the number and kind of buildings erected in accordance with the request of said Minister. 5. The number and extent of roads, bridges and other improvements, designating the nature of such improvements, required by the Minister to be done under Clause 5 of said agreement and the number and extent of such roads, bridges and other improvements completed in accordance with such request. 6. The number of schools and school buildings erected under Clause 6 of said agreement, and whether same are established and erected to the satisfaction of the Minister, also the location of such schools, particularizing those which are not satisfactory to the Minister and the reason for such dissatisfaction. 7. The amount of work required to be performed under Clause 7 of said agreement that has actually been performed, particularizing the nature and cost of such work, and the date each work was commenced and completed. 8. The number of acres cut over by the purchaser under Clause 8 of said agreement, and whether same cleared in accordance with the terms of said clause and to the satisfaction of the Minister; and whether the terms of said clause as to leaving 20 acres of wood for each farm have been complied with, and the kind of wood so left. 9. Whether all the timber cut by the purchaser has been manufactured in the townships of Kendry and Haggart,

and if not, the amount not so manufactured and the amount of timber disposed of outside of such townships, and to whom the same was sold. 10. The amount of timber that has been purchased from the settlers by the purchaser, and upon what terms were such purchases made; and how much and at what rate were the settlers paid for cutting and removing timber; and what was the rate charged to the settler for the use of the purchaser's teams. 11. The number and date of sales that have been made by the purchaser to settlers and the terms of such sales and copies of all agreements between such settlers and purchasers and as to whether the same have been approved of by the Minister. 12. The number of patents issued to settlers under Clause 13 of said agreement. 13. The extent of the lands upon which patents have been issued to the purchaser under Clause 14 of said agreement, and the nature and cost of the buildings built on same for which such patents granted. 14. All correspondence between the Government or any officer or official thereof and the purchaser or any of them, or any officer or official of such purchaser, and between the Government or any officer or official thereof and any settlers, relating to the whole or any part of the subject matter of the said agreement. Presetned to the Legislature, March 6th, 1917. Mr. *Lang*. *Not Printed.*

No. 69 Return to an Order of the House of the 16th February, 1917, for a Return shewing:—1. All statements furnished by the Canada Copper Company, International Nickel Company, Mond Nickel Company, and any other company producing nickel, under section 8 of The Mining Act, respecting taxation since the 1st of January, A.D. 1915. 2. All reports from any Government Mine Assessor, made under the provisions of The Mining Act, in respect to the mining operations of the Canada Copper Company, the International Nickel Company or the Mond Nickel Company, particularly with reference to the taxes to be paid by the said companies, or any of them, under The Mining Tax Act. 3. All correspondence since the 1st day of January, 1915, between the Minister of Lands, Forests and Mines, or the Provincial Treasurer, or any officer or official of the Government, and the Canada Copper Company, the International Nickel Company, the Mond Nickel Company, and any other companies producing nickel, or any officer or solicitor for or on behalf of the said companies, or any of them, with reference to the amount of taxes or royalties paid or to be paid by the said companies or any of them, to the Provincial Treasurer of the Province, in respect of the ore mined or the mining operations carried on by them in the Province of Ontario. Presented to the Legislature, March 16th, 1917. Mr. *Carter*. *Not Printed.*

No. 70 Return to an Order of the House of the 9th March, 1917, for a Return shewing:—1. The number, kind and cost of buildings comprised in the Burwash Prison Farm property. 2. What is the number of acres of land belonging to or included in the Bur-

wash Prison Farm property, and of such land, how many acres are under cultivation, and how many acres are used for the purpose of pasture. 3. How many prisoners are there at Burwash Prison Farm. 4. What is the number of employees at the Burwash Prison Farm, and what is the amount of salary paid to each employee. 5. Were cattle or other animals shipped from the Burwash Prison Farm in the year 1916, and if so, what was the number so shipped, the total value of such shipments and the amount paid as freight charges thereon. 6. Were cattle or other animals brought to the Burwash Prison Farm from other places in the year 1916, and if so, what was the number so brought, and what were the names of the places from which said cattle or other animals were brought. Presented to the Legislature, March 16th, 1917. Mr. *Mageau. Printed.*

No. 71 Return to an Order of the House of the 16th February, 1917, for a Return:—1. Shewing the names of all the Townsites established by the T. & N. O. Ry. Commission. 2. Shewing all the townsite lands sold by the T. & N. O. Ry. Commission on or after July 29, 1916, the towns in which they were situated, and the amounts received for each. Presented to the Legislature, March 20th, 1917. Mr. *Bowman. Not Printed.*

No. 72 Copies of contracts with The Kinleith Paper Company, Limited, St. Catharines, Ontario; The Georgetown Coated Paper Mills, Limited, Georgetown; The Provincial Paper Mills Company, Limited, Toronto; authorized by Order in Council dated February 20th, 1917. Presented to the Legislature, March 21st, 1917. *Printed.*

No. 73 Return to an Order of the House of the 19th February, 1917, for a Return shewing if the Canadian Northern Railway Company applied to the Minister of Lands, Forests and Mines to designate the lands or any part of the lands to be granted to the said railway as provided in section 3, 9 Edw. VII., chap. 71. 2. Has the Minister of Lands, Forests and Mines designated any such lands or any part of the same. 3. If such lands or any part of the same have been so designated, what is the total acreage so designated, and of what townships or part of townships does the same consist. 4. Have the said lands or any part of the same been surveyed. 5. If the said lands have not been so designated, why have they not been designated. Presented to the Legislature, March 21st, 1917. Mr. *Davidson. Printed.*

No. 74 Return to an Order of the House of the 23rd February, 1917, for a Return shewing:—1. What amounts have been paid and upon what dates since January 1st, 1916, to the firm of Gunn, Richards and Company, Production Engineers and Public Accountants of 43 Wall Street, 43 Exchange Place, New York, or to any one acting for them, or on their behalf, on account of any

Department of the Government. 2. What amounts, if any, are still owing to the said firm or any one acting for them or on their behalf. 3. What were the services rendered in respect to which such payments were made or liability incurred. 4. By what authority was the employment of the said firm authorized. Presented to the Legislature, March 21st, 1917. Mr. *Richardson. Not Printed.*

No. 75 Return to an Order of the House of the 19th February, 1917, for a Return shewing:—1. The total capital expenditure to the end of the fiscal year for all purposes in respect to the Guelph Prison Farm. 2. Any further capital expenditures contemplated, and if so, to what amount. 3. How many prisoners, on the average, have been accommodated at the Guelph Prison Farm during the year 1916. 4. How many prisoners are now at the Guelph Prison Farm for offences against the criminal law. 5. What was the average number of prisoners at the Guelph Prison Farm during the year 1916 for offences against the criminal law. Presented to the Legislature, March 28th, 1917. Mr. *Ferguson (Kent.) Printed.*

No. 76 Return to an Order of the House of the 28th March, 1917, for a Return shewing:—1. What was the total cost of the knitting plant installed at the Mercer Reformatory, Toronto. 2. From whom was such knitting plant purchased and what was the date of purchase. 3. When was the said knitting plant installed. 4. What amount was paid to operatives up to the 1st of March, 1917, for operating the said plant. 5. What is the value of the goods produced from the knitting plant. 6. Have the goods produced by the said plant been sold, and if so, to whom. Presented to the Legislature, March 29th, 1917. Mr. *Ferguson (Kent.) Not Printed.*

No. 77 Return to an Address to His Honour the Lieutenant-Governor of the 19th February, 1917, praying that he would cause to be laid before this House a Return:—1. Of copies of all correspondence passing between the Government of this Province, or any member, officer or official thereof, and the Government of the Dominion of Canada, or any officer or official thereof, in reference to the care of Returned Soldiers. 2. Of all correspondence passing between the Government of this Province, or any member, officer or official thereof, and the Government of the Dominion of Canada, or any officer or official thereof, in reference to the establishment of Convalescent Homes for the care of Returned Soldiers. 3. Of all correspondence passing between the Government of this Province, or any member, officer or official thereof, and the Government of the Dominion of Canada, or any officer or official thereof, in reference to the relations between the Soldiers' Aid Commission and the Military Hospitals Commission of the Army Medical Service Corps. Presented to the Legislature, April 2nd, 1917. Mr. *Rowell. Not Printed.*

No. 78 Return to an Order of the House of the 21st March, 1917, for a Return of copies: 1. Of all correspondence and documents at any time passing between the Director of Industries, Ontario Reformatory, and the Assistant Provincial Secretary, referring to Alexander McPherson, foreman, Ontario Reformatory Industries, and Fred. W. French, Assistant Director of Ontario Reformatory Industries, or either of them, or relating to any matters arising between the said Alexander McPherson and Fred. W. French. Presented to the Legislature, April 2nd, 1917. Mr. *Richardson*. *Not Printed.*

No. 79 Copies of all Orders-in-Council made under the authority of the Department of Education Act or of the Acts relating to Public Schools, Separate Schools or High Schools, passed since the opening of the present Session of the Legislative Assembly. (*See No.* 61.) Presented to the Legislature, April 2nd, 1917. *Printed.*

No. 80 Return to an Order of the House of the 30th March, 1917, for a Return shewing: 1. What has been the cost of the Ontario Nickel Commission since the 1st day of February, 1917: (*a*) For salaries or payments by way of remuneration or honorarium to each member of the Commission respectively; (*b*) For travelling expenses of each member of the Commission respectively; (*c*) For allowance in lieu of travelling expenses to each member of the Commission respectively; (*d*) For other purposes, specifying such purposes and amounts. 2. What honorarium, remuneration or salary is payable or to be paid to the members of the Commission other than G. T. Holloway. 3. Is the Chairman, G. T. Holloway, still in the Government employ at $20,000 *per* year and $10.00 *per* day in lieu of travelling expenses, and if so when will the obligation of the Government cease. 4. Are the travelling expenses of the said G. T. Holloway from Toronto to Great Britain to be paid by the Government in addition to the allowance made to him. 5. What were the services rendered by each of the following parties in respect of which payments were made to them for salary as shown in the Return of the 16th February, 1916, respectively: Professor George A. Guess, salary, $1,250; F. Clithero, salary, $388.54; G. W. Dixon, salary, $359.03; A. L. Clark, salary, $600.00; R. N. Dickson, salary, $485.00; A. Stanfield, salary, $200.00; E. M. Tozer, salary, $306.60; E. A. Wilson, salary, $210.73. Presented to the Legislature, April 4th, 1917. Mr. *Dewart*. *Not Printed.*

No. 81 Return to an Order of the House of the 19th March, 1917, for a Return of copies of all correspondence between the Government of Ontario or any Member, officer or official thereof, and the Devonshire Race Track Company or any member, officer or official thereof, and in particular the correspondence between J. T. White, Esq., Solicitor to the Department of the Provincial Treasurer, and Hon. Dr. Reaume. Presented to the Legislature, April 4th, 1917. Mr. *Wigle*. *Not Printed.*

No. 82 Return to an Order of the House of the 28th March, 1917, for a Return of:—1. Copies of: (1) Charter of the Gore Bay Riding and Driving Association. (2) Supplementary Letters Patent, dated 17th November, 1915, increasing capital stock to $25,000, and changing name to "Northern Riding and Driving Association." (3) Supplementary Letters Patent, dated 12th February, 1916, increasing capital stock to $200,000. 2. Copies of all annual returns made by the said company. 3. Copies of all correspondence, and documents filed with the Government on the application for the issue of said Supplementary Letters Patent. 4. Copies of application for license to the Provincial Treasurer, and all correspondence and communications in connection with the issue of said license to hold a race meeting at Windsor. Presented to the Legislature, April 6th, 1917. Mr. *Wigle*. *Not Printed.*

No. 83 Report of the Horticultural Experiment Station, Vineland Station, Ontario, 1906-1915. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 84 Report of the Soldiers' Aid Commission of Ontario, 1916. Presented to the Legislature, April 6th, 1917. *Not Printed.*

No. 85 Return to an Order of the House of the 12th March, 1917, for a Return shewing what was the number of prisoners in all gaols, reformatories and prisons in the Province of Ontario, on the thirtieth day of September, 1916. Presented to the Legislature, April 6th, 1917. Mr. *Parliament*. *Not Printed.*

No. 86 Return to an Order of the House of the 26th March, 1917, for a Return shewing:—1. What was the total number of members of the Inside Civil Service of the Government of the Province of Ontario and the total number in each department thereof on the 31st day of July, 1914, the 31st day of July, 1916, and the 28th day of February, 1917, respectively. Presented to the Legislature, April 6th, 1917. Mr. *Elliott*. *Not Printed.*

No. 87 Return to an Order of the House of the 16th March, 1917, for a Return shewing:—1. What tenders were received for each and every of the lots advertised for sale by George W. Lee, Commissioner of the Temiskaming and Northern Ontario Railway in the "North Bay Times" on Thursday, October 12th, 1916. 2. Which of the said lots have been sold by the said George W. Lee, the Temiskaming and Northern Ontario Railway Commission or any officer or official thereof. 3. What were the prices and terms at and upon which each and every of the said lots were sold by the said George W. Lee, the said Commission or any officer or official thereof. 4. Which of the said lots sold by the said George W. Lee, the said Commission, or any officer or official thereof, within the municipalities of Porquis June-

tion. Matheson, Cochrane, and Englehart, or what proportion of each and every lot so sold lies within the municipalities. Presented to the Legislature, April 6th, 1917. Mr. *Mageau*. *Not Printed.*

No. 88 Return to an Order of the House of the 21st March, 1917, for a Return of copies:—1. Of all reports for the year ending October 31st, 1916, of the superintendents of each and all the asylums, government prisons and reformatories in Ontario. 2. Of letters between Assistant Provincial Secretary and Fred Hill, relating to the dismissal of the said Fred Hill from the staff of the Ontario Reformatory at Guelph. Presented to the Legislature, April 6th, 1917. Mr. *Grieve*. *Not Printed.*

No. 89 Return to an Order of the House of the 16th February, 1917, for a Return shewing:—1. What amount has actually been paid since January 1st, 1916, for war purposes, by the Government, out of the proceeds of the Provincial War Tax. 2. For what particular purposes have such payments been made and what are the date of such payments. Presented to the Legislature, April 6th, 1917. Mr. *Bowman*. *Not Printed.*

View of Algonquin Park Station and The Highland Inn, Cache Lake, Algonquin Provincial Park.

REPORT

OF THE

Minister of Lands, Forests and Mines

OF THE

PROVINCE OF ONTARIO

For the Year Ending 31st October

1916

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1917

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

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Report of the Minister of Lands, Forests and Mines of the Province of Ontario

For the Year Ending 31st October, 1916

To His Honour the Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the honour to submit for the information of your Honour and the Legislative Assembly a report for the fiscal year ending 31st October, 1916, of the management of the Crown Lands of the Province.

CLERGY LANDS.

The collection on account of Clergy Lands was $1,692.32. No land was disposed of during the year. (See Appendix No. 3, page 8.)

COMMON SCHOOL LANDS.

The area sold during the year was 50 acres. The collection on account of those and former sales was $3,760.48. (See Appendix No. 3, page 8.)

UNIVERSITY LANDS.

The area of these lands sold during the year was 2,967.50 acres for $1,483.75. The collection on account of these and former sales was $1,518.51. (See Appendix No. 3, page 8.)

CROWN LANDS.

There was sold during the year for agricultural and town site areas 98,209.02 acres for $66,815.98. The collection on account of these and former sales was $83,533.03. There was sold for mining purposes 14,592.11 acres for $37,756.28. There was collected on account of these and former sales $36,457.56.

There was leased for mining purposes 5,858.04 acres for $5,858.04. There was collected on account of these leases and those of former years $16,218.36. There was leased of Crown lands an area of 11,689 acres for $1,170.87. There was collected on account of these and the leases of former years $50,756.43.

The total area of Crown lands disposed of by sale and lease during the year was 133,447.01 acres for a value of $113,397.18, as compared with 174,199 acres sold and leased in 1914 for $134,433. The total collection on account of the sales, leases, etc., was $194,057.82. (See Appendix No. 3, page 8.)

Sales.

Under Part 1 of the *Public Lands Act,* 98,209 acres were sold for farming during the year as compared with 146,307.19 acres for 1915, a very appreciable decrease, but one not altogether unexpected in view of disturbed economic labour and immigration conditions due to the war. During 1915 in the Temiskaming and Hearst Section of Northern Ontario 889 persons purchased farms, while for the past year only 641 settlers secured holdings, or an average for the two war years of 765, whereas the average for the two years prior, 1913 and 1914, part of which was covered by the early stages of the war, was nearly 200 greater.

The reduction in the last two years is largely, if not wholly, attributed to the above-mentioned conditions occasioned by the war, a large percentage of those whom we would expect to settle having enlisted for active service. Already over 400 actual settlers have requested and been granted protection by virtue of their enlistment, and no doubt others have donned the khaki without taking the necessary precautions to advise the Department, but careful enquiries are made if a question arises as to the possibility of a land holder being a soldier when his claim is sought to be cancelled.

Ranching Leases, Etc.

Throughout the year many enquiries have been made as to the ranching business which the Department is endeavouring to encourage on those areas of land that have been partly burnt over, denuded of the timber and untillable in the general acceptance of the term. Large tracts of such areas exist in different parts of the Province, both in Old and New Ontario, where the land is hilly and broken with intervening valleys producing excellent fodder. Practically the entire Trent Valley section or that region between Lake Ontario and Georgian Bay lying in a north-westerly line consists of tracts of land that have lain waste for years and only await the arrival of a practical cattle or sheep raising man.

Four ranching leases were issued during the year, the lessees being required to put on and maintain a certain number of head of stock, cattle or sheep, or both, the number determinable by the size and capabilities of the land. Rentals are at the rate of 5 cents an acre per annum and a short or long term lease of 7 to 21 years with reasonable conditions prevails. The success attained by some ranchers within the last three years has urged others to promote the cause and is sufficient to justify the belief that ranching on Crown Lands in the Province, now in its infancy, will grow to large proportions.

There were in addition to the four leases above mentioned fourteen Crown Leases issued during the year for various purposes such as mining, water lots, church sites, water powers, etc.

Licenses of Occupation to the number of 42 were issued, the majority for mining purposes, while seven of them covered water lots and three lumbering operations.

The long established system of dealing with water lot applications has been materially changed, and now preparatory to treating such cases an official inspection and a careful valuation is made, the report of the engineer being the basis upon which the Department acts as to leasing, granting or issuing Licenses of Occupation. The departure has already considerably augmented the public revenues.

Free Grants.

During the fiscal year ending October 31st, 1916, locations of Free Grant land were carried out to only 620 persons as against 1,355 persons for the preceding year, while 155 persons purchased land in Free Grant territory as against 200 for the year ending 31st October, 1915.

Permission was granted to 232 locatees to assign their locations, the new parties being required to meet all the requirements incidental to the issue of patents.

The total area allotted to the 775 Free Grant settlers was 90,330 acres, or less than one-half the aggregate for the previous year.

Patents issued to 421 Free Grant settlers who satisfied the requirements of building, residence, clearing and cultivation.

An analysis of this year's work with that of last year reveals the fact that the important falling off of locations is in the newer parts of the Province. The Port Arthur section alone dropped from 301 locatees to 119, of whom 39 were assignees of former locatees. Rainy River and Kenora Districts furnished only about one-half that of last year, while noticeable reductions are also found in Sudbury and Nipissing Districts.

The Free Grant sections of Old Ontario have likewise experienced a decided lull in homesteading. The office of the Crown Land Agent at Warren, in the Sudbury District was closed and a new agency established at Markstay for the same townships, the latter place being deemed more convenient. Blezard Valley Agency was also closed, the necessity for its continuance being obviated by reason of practically all the land being granted. For the purpose of meeting the occasional demands of settlers in this section the townships forming such agency were transferred to Sudbury where they are now handled by the local agent.

These figures are the lowest that have obtained in Free Grant transactions for many years, and though the difference between this year and former years is quite noticeable the reasons are more or less obvious. With the exception of two additional concessions in the townships of Gorham and Ware in the Thunder Bay district no new lands were placed during the year under the operation of the Free Grant Section of the Public Lands Act, and as by far the greater percentage of the arable areas of townships at present open have been disposed of by location or otherwise, the opportunities for selection are not so wide. Again the general publicity and attention given to the Great Clay Belt in the Temiskaming district where there are no Free Grant areas has detracted from Free Grant sections that might otherwise be sought by prospective settlers. Besides, several townships in the Sudbury district were withdrawn from settlement by reason of their proximity to the roasting beds of the Copper Company, the Department not desiring to encourage settlement on lands where clearance and crops might be imperilled by sulphur smoke.

Finally the continuous call to arms and the ready answer by many settlers and would-be land takers, together with the effects of the great war upon immigration, has had disastrous effects upon the numbers seeking and securing free homesteads.

Military Grants.

The total number of Military Certificates issued to date, under the Veterans Land Grant Act, 1 Edw. VII, Cap. 6, and amendments thereto, is 13,998. During the year 57 letters were received from men or from the next of kin of veterans who had served on the frontier during the Fenian Raid, but had only now heard of this

grant and asked for application forms. As the time for receiving these applications expired on 30th September, 1908, these application forms could not be sent to them.

During the year there have been 76 certificates located covering 12,018 acres in the townships open for veterans, making in all a total of 8,174 certificates located.

There were 12 certificates surrendered to the Crown for the $50.00 commutation money, this makes a total of 3,254 certificates surrendered.

In 18 cases the certificates have been surrendered and applied in payment of lands purchased from the Crown, covering in all 2,736 acres, making a total of 760 certificates that have been applied in this manner.

During the year there have been 132 patents issued for lands located by veterans, making a total of 7,064 thus disposed of.

The total number, therefore, of certificates that have now been redeemed is 12,251, leaving 1,747 still outstanding.

Under the Act 1st Edw. VII, Cap. 6, and amendments thereto covering these grants it is necessary for all locatees of the lands granted under this Act to apply for their patents for such land before ten years have expired from date of location. If this application for patent is not made within the ten years then the land comes under the settlement regulations, and unless the settlement duties are proceeded with, the locations are liable to cancellation. Previous to the expiration of the ten years after location, the Department has sent a notice to each veteran who should apply for his patent stating this fact, and in this manner have saved many of the locations from becoming subject to the settlement duties. See Appendix No. 11, page 37.

Financial Aid to Settlers.

Under the Legislation passed at the Session of 1916, a Settlers' Loan Commission was appointed.

The Loan Commissioner will have available, out of the Northern Ontario Development Fund, money to advance to settlers on the land, chattels and crops. The loan will bear a low rate of interest and the patent to the land will be held as final security.

Applicants for loans will deal directly with the Loan Commissioner thus avoiding delay and expense. The appointment of the Loan Commissioner was made in time, and the office sufficiently organized, to render useful and satisfactory service to many who suffered in the recent disastrous fire in Northern Ontario. One hundred thousand dollars was set aside out of the fund to assist settlers. The full weight of this tragedy was hardly realized in the older portions of the Province. The call for help that came from the north was insistent, but the response was ready. Trains were despatched from North Bay carrying doctors, nurses, medical supplies, food and clothing. Once the physical wants of the people were cared for the problem of re-habilitating the district, and preventing a recurrence of the horror, was taken up. The Loan Commissioner was able, with the money placed at his disposal, to co-operate with the Department in securing supplies of lumber and other necessities to enable the settlers to build homes against the coming winter.

During the period from August 12th to October 31st, 1916, 606 applications for loans were received covering an aggregate amount of $230,800.

Owing to conditions existing in the district of Temiskaming, caused by the disastrous fires, every effort was made to grant as much assistance as possible to

those desiring loans in that district, and after inspections had been made 121 loans were granted amounting to $36,525.

Consideration is now being devoted to all other districts, and from the number of applications received since the Act has been put into effect it would appear that the settlers generally are desirous of taking advantage of the opportunity presented to secure funds for a further improvement of their farms.

For particulars of applications and the distributing of loans, see Appendix No. 32, page No. 93.

The Mining Industry.

The Bureau of Mines has collected returns from the metalliferous mines and works of Ontario showing the production for the nine months ending 30th September, 1916. Following are the figures for the period, and for purposes of comparison, figures for the corresponding period of last year. It will be noted that there has been a large increase in the aggregate value, and also in the value of nearly all the individual products, due to causes mentioned in the notes appended.

Summary of Mineral Production First Nine Months of 1916.

Product.	Quantity.		Value.	
	1915	1916	1915	1916
Cobalt ore, tons	92	98	$12,472	$10,591
" oxide, lbs	135,337	378,732	107,363	231,947
" metallic, lbs	76,979	172,055	66,552	146,467
Cobalt and nickle oxides (unseparated), lbs.	2,501	57,026	500	22,890
Copper ore, tons	.....	1,715	.....	21,685
" in matte, tons	14,057	16,989	2,024,658	6,285,930
Gold, ounces	281,712	363,955	5,826,941	7,513,734
Iron ore, tons	302,586	271,034	601,044	673,170
Molybdenite (concentrates), lbs.	.....	15,845	.....	15,845
Nickel, oxide, lbs	142,483	5,152	16,085	6,381
" metallic, lbs	11,905	17,435	4,762	7,618
" in matte, tons	24,054	31,046	5,369,536	15,523,000
Pig iron, tons	354,153	501,410	4,510,906	6,686,965
Silver, ounces	17,178,629	16,203,091	8,030,469	9,750,040

Cobalt.—The silver mines of the Cobalt district have definitely established their supremacy of the sources of the world's supply of this mineral. Notwithstanding the war, which has closed the European markets, the shipments of cobalt oxides were much greater, both in quantity and value than in the first nine months of 1915. It will be observed that metallic cobalt is assuming an important place in the list. This is mainly due to its use in the manufacture of special alloys, principally stellite, for high speed tools. Stellite is made of cobalt, chromium and tungsten, and is finding a good demand from munition makers and other workers of modern hard steels.

Copper.—The extraordinary rise in the price of copper, which averaged 27 cents per pound in New York during the nine months, has brought about the opening of several deposits of copper ore chiefly west of Lake Superior, from which shipments have been made to British Columbia smelters. The principal of these mines

is the Tip Top; another at Mine Centre has lately been sending forward to B. C. a carload of ore daily. The price received by the shippers has averaged 18.5 cents per pound for the copper contents. This figure has also been applied to the copper contained in the heavy shipments of matte from the Sudbury nickel-copper mines, and a considerable part of the increase in value of the copper reported is due to the higher valuation, although the quantity shipped was also greater by 20 per cent.

Gold.—The output from the mines of Northern Ontario is steadily increasing, being 28 per cent. in excess of that for the nine months of 1915. Hollinger Consolidated continues to be the chief producer, accounting for 47 per cent. of the total. Dome followed with 21 per cent., and McIntyre-Porcupine with 10 per cent. The other considerable contributors in this camp are Porcupine Crown, Schumacher, Vipond, and Jupiter, which together furnished 5.5 per cent. Outside of Porcupine proper, Tough-Oakes yielded $519,149: Canadian Exploration, Croesus and a small output from Dome Lake amounted to over one-quarter of a million dollars. At Teck-Hughes (Kirkland Lake) the mine has been developed and a mill built which will be put in operation as soon as the power transmission line now being erected from Cobalt has been completed. Other prospects here, the Lake Shore, Wright-Hargrave, Kirkland Lake Gold Mines, La Belle-Kirkland and Sylvanite are also being developed. This is a promising camp. In Gauthier township the Huronian mine is being worked under a lease. Several discoveries of gold were made during the summer in Benoit township, but there has not been time to prove their value. At Tashota, the Tash-Orn Company has bought the Wells claim and has put in machinery to give it a thorough test. This company is also working the King-Dodds claims. A diamond drill has been operated on the Devanney, Reamsbottom and Clive claims.

Molybdenite.—There is a demand in Britain for making tool-steel, and several deposits of the ore in Eastern Ontario have been opened and are being worked. There are dressing plants at Renfrew and Ottawa, the latter operated by the Dominion Mines Department. Ferro-molybdenum is also being made at Orillia and Belleville. The supply of molybdenite throughout the British Empire has been reserved as a war measure and a price of 105 shillings per unit fixed for concentrates delivered at Liverpool. This approximates $1.00 per pound here.

Nickel.—The Canadian Copper Company and the Mond Nickel Company have been working their mines and smelters at maximum capacity, and the output of nickel, contained in the matte product of the furnaces, for the nine months falls little short of that for the full year 1915. The production for 1916 will probably exceed the production of 1915 by 20 per cent. The valuation of the nickel in the matte has been increased from about 11 cents per pound (the figure adopted by the mining companies) in 1915 to 25 cents per pound in 1916. Nickel refineries are to be erected in Ontario by the International Nickel Company and the British American Nickel Corporation, the latter of which is developing the Murray mine. Small quantities of metallic nickel are being produced from Cobalt ores by the Deloro Smelting and Refining Company.

Iron.—The whole production of iron ore was from the Helen and Magpie mines of the Algoma Steel Corporation. At the latter the ore (siderite) is roasted previous to shipment. Four blast furnace companies at Port Colborne, Sault Ste

Marie, Deseronto and Hamilton, respectively, produced pig iron in quantity 41 per cent., and in value 48 per cent. greater than in the corresponding period of 1915.

Silver.—The mines at Cobalt continue to produce, though on a slowly diminishing scale. The number of fine ounces contained in the shipments of the nine months was 975,538 below the record for the same period of last year, but owing to the much higher prices that have prevailed for silver the return of the mining companies was $1,719,571 greater. Silver started the year at 56.76 cents per ounce and rose to a maximum in May of 74.27 cents, when it receded to 63.06 in July, reaching 68.51 cents again in September. In 1915, the monthly average was 49.75 cents per ounce. Nipissing still leads in production, Mining Corporation coming next, followed by Kerr Lake, Coniagas, McKinley-Darragh-Savage, Seneca-Superior, Temiskaming, etc. The flotation process is likely to assist materially in increasing the production of silver at Cobalt. It has been introduced at the Buffalo mine, where it is treating successfully low-grade tailings containing 5 or 6 ounces per ton. From the gold ores treated during the period 66,347 ounces of silver were obtained, and from the copper ores 607 ounces.

Collections.

The total revenue of the Department from all sources was $1,860,557.37. Of this $83,555.03 came from agricultural lands and town sites: mining lands $36,578.69; mining and crown leases $66,974.79; miners' licenses, permits and recording fees $66,906.98; royalties $15,083.52; supplementary revenue tax $186,827.12. From woods and forests the revenue was $1,335,320.78 made up of the following items, bonus $419,827.94; timber dues $822,332.81; ground rent $89,520.03; transfer fees $3,640.00. (See Appendix No. 4, page 9.)

Disbursements.

The total expenditure of the Department for ordinary services was $627,347.95. Some of the principal items were: Agents' salaries and disbursements $17,251.77; homestead inspectors $12,593.23; Crown timber agents $29,402.13; wood ranging and estimation of timber $166,197.58; fire ranging $111,118.20; forest reserves, fire ranging, etc., Temagami reserve $37,789.21, Metagami reserve $7,936.76; Mississaga reserve $18,722.89; Nipigon reserve $18,881.24; Eastern reserve $2,804.68; Sibley reserve $832.50; mines and mining $51,524.01; mining recorders $24,000.43; surveys $63,884.33; contingencies, lands and forests $28,679.47; bureau of mines $12,085.06.

A further sum of $111,171.05 was expended under the direction of the Department, distributed as follows: Algonquin Park $35,473.13; Quetico Provincial Park $11,268.87; expenditures under Bounty Act, 7 Edward VII, cap. 14, $25,550.91; Veteran's Commutation $600.00; Royal Nickel Commission $37,578.14. (See Appendices Nos. 6 and 7, pages 11 and 33.)

Woods and Forests.

The revenue accrued from woods and forests for the year ending 31st October, 1916, was $1,405,425.06, which was $224,224.54 less than that of the preceding year.

The revenue collected amounted to $1,335,320.78, a decrease of $192,784.04, as compared with the year ending 31st October, 1915.

This decrease is directly attributable to the war. The number of men enlisting for overseas service rendered it difficult for the lumber companies to properly man their camps, and the cessation to a very great extent of building operations greatly lessened the demand for lumber.

In only one respect did the quantity taken out compare with that of the previous season, 738,597 railway ties being taken out, which was 9,433 in excess of the number for 1914-15.

The production of pine timber, saw logs, square timber, etc., was 307,826,365 feet board measure, a decrease of 100,000,000 feet board measure from quantity produced last year. Timber other than pine also shows a considerable falling off, 38,906,200 feet board measure being taken out as against 59,308,403 feet board measure for season 1914-15.

The quantity of pulpwood taken off Crown lands was 169,513 cords, or 131,443 cords less than last season, but nearly 65,000 cords more than was cut during season 1913-14.

There is already apparent an increased demand for nearly all classes of timber, and the output for 1917 it is confidently expected will show a substantial increase over that for the past season.

The shortage of cars and consequent difficulty in securing coal has greatly increased the demand for cordwood for fuel purposes, and this will enable settlers to derive considerable revenue from the wood upon their lands.

The available supply of pulpwood in the United States is nearly exhausted and this has led to constant inquiries being made with respect to pulp bearing lands in the Province of Ontario. Inquiries have been received from several European countries as well as from all sections of the Republic to the south.

Two areas have recently been offered for sale by public competition. These areas are known as the Pic River Pulp and Timber Limit and the Black Sturgeon Pulp and Timber Limit.

The pulp companies already in operation have recently added additional units to their plant and are prepared to purchase from settlers in order to insure sufficient pulpwood for their mill.

Sources of Revenue.

The $1,355,320.78 collected during the year ending October 31st, 1916, was made up as follows:

Timber Dues	$822,332 81
Bonus	337,972 94
Ground Rent	89,520 03
Transfer Fee	3,640 00
Deposit on Timber Sales	81,855 00
	$1,355,320 78

Lands Under License.

The area under license last year was 15,712¼ square miles, which is one-half square mile more than the area under license the previous year, that is to say, the new licenses issued represent an area equal in extent to the sum of the areas dropped from license.

The area under license varies from year to year for the following reasons:

1. License does not issue because of the failure of the licensee to pay timber dues owing on timber cut under authority of a license.
2. Nonpayment of ground rent.
3. Areas that have been cut over are dropped from the license.

Cullers' Examinations.

Two Cullers' Examinations were held during the year, one at North Bay and one at Kenora. Six candidates succeeded in passing the examination and were duly granted certificates authorizing them to act as Cullers.

(For complete list of licensed cullers see Appendix 12, page 38.)

Ontario Pulp Wood Industry.

The wood used in the manufacture of pulp has shown substantial increases in the Province. The 1913 production was worth $4,107,689, increasing in 1914 to a value of $4,148,405, and keeping ahead of the four million mark in 1915 with a production worth, approximately, $4,500,000. The production of wood used in the manufacture of pulp in three years in the Province of Ontario produced a value of, approximately, $12,500,000. While five of our Provinces contributed to the output of pulpwood in 1915 over 50 per cent. of the total Canadian production was in this Province.

The newspaper industry is occupying the centre of the stage and is consequently responsible for the great activity in the pulp mills of the Province. While no complete statistics have been gathered to trace with real certainty the cause of high prices the unprecedented demand for paper continues to raise prices to the small consumers which seems to indicate the existence of an actual shortage. The mills are unable to promise dates of delivery and are not taking orders for months ahead.

Ontario Pulp Wood Production.

The following chart shows the value of the wood used in the manufacture of pulp and paper in the Province of Ontario, also the pulp produced, in accompanying table:

1912,	Tons	173,903,	Value	$1,235,343
1913,	Tons	321,244,	"	2,297,389
1914,	Tons	477,751,	"	3,172,235
1915,	Estimate	500,000,	"	4,200,000

Fire Ranging.

During the month of May and first three weeks of June, 1916, rain fell almost daily. So much water fell during this period that the ground was thoroughly saturated and no danger from fire was possible, but the last week of June the

weather became extremely hot and intense heat prevailed all through July and for the greater part of August, causing everything to become dry as tinder. The settlers who had been prevented by the frequent rain from burning the brush now availed themselves of the changed conditions and began to set out fires to clear their lands. For a couple of weeks all went well, but during the last few days of July violent winds sprung up in the Temiskaming district, fanning the individual fires, driving them beyond control, uniting them into one seething caldron of flame. The loss of life and damage to property makes this the most terrible and deplorable fire in the history of the Province. A more detailed account of this fire will be found elsewhere in this report.

In the early part of August fires were reported from almost every part of Northern Ontario, but in no other case were they attended by loss of life. Although some valuable timber was damaged in different sections of the Province, for the most part the fires were kept confined to certain well defined areas by the well directed efforts of the ranging staff. Too much credit cannot be given to the men who in some cases kept up the fight for several days and nights, and finally found their efforts crowned by success.

The fires occasioning the greatest damage to timber were in the townships of Gooderham, Notman, Janes, Dana, McNeish, Pardoe, Cotton, Howey, Grigg, Beardsford, Sweeney, Frechette and Valin.

Where the damaged area was under license the timber damaged by fire will be cut and removed by the licensee this season.

Where the areas were not already under license sales were affected, the purchasers agreeing to remove the damaged timber this winter. The prices obtained for the damaged timber in these sales were better than might reasonably have been anticipated.

Some 1,804 fires in all were reported during the season, but only in the case of 125 were they attended by any damage to timber, the balance being put out by the rangers before they had an opportunity to spread.

Nearly 50 per cent of the fires were said to be caused by railway engines, but very few of these fires occasioned any damage. It is only fair to state that the railways are co-operating whole-heartedly with the Department in its efforts for the protection of the forests wealth of the Province.

Next to the railway engines the cause of the greatest number of fires is given as settlers clearing lands. These fires occasion the greatest damage as the clearing is generally contiguous to standing timber and plenty of material is at hand to feed the flames and cause them to spread. The other causes of fires given are lightning, campers, berry pickers, tourists, smokers and road construction.

There were 474 men on duty on Crown Lands during the fire ranging season of 1916, distributed as follows:

Forest reserves, 186; railways, 127; Crown Lands, 115. These men were under the direct supervision of 19 chief rangers and 7 deputy chief rangers. There were also 12 inspectors on railways, 8 supervisors on lands under license.

Forest Reserves.

Temagami Forest Reserve was patrolled by 113 rangers last season, under the direction of four chief rangers and one deputy.

Missassaga Reserve had a staff of 48 rangers under the supervision of a chief ranger and three deputies.

Nepigon Reserve had 17 rangers on duty under one chief. There were in addition a staff of 17 men in the Kowkash Mining District.

Eastern and Sibley Reserves had the usual staff of rangers.

The cost of patrol in the forest reserves was $86,966.78.

Railways.

One hundred and twenty-seven men under six chief rangers and a deputy chief ranger patrolled the T. & N. O. and Canadian Government railways, there being 62 on the T. & N. O. and 65 on the Transcontinental, including 8 men on the Superior Junction branch.

All other railways were under the jurisdiction of the Dominion Railway Board and were responsible for fire protection along their lines. The Department appointed 12 inspectors to see that the regulations of the Board were carried out. The cost of railway patrol was $60,274.00. The cost of fire ranging on Crown Lands other than railways and reserves was $50,842.22.

The number of rangers on licensed lands was 290. The approximate cost of fire ranging would be $75,000.00. This is borne by the licensees who are responsible for fire protection in connection with their limits.

SUMMARY OF COST

Cost of Patrol, Railways and Crown Lands	$111,118 23		
" " Forest Reserves	86,966 78		
			$198,085 00
" " Licenses Lands (Approximate)			75,000 00

The rangers on railways are furnished with velocipedes, 13 being in use last season, 3 of them motor speeders. Canoes are provided for rangers in the reserves and wherever their use could be of any assistance. Seven gasoline launches were used in the fire protection service, and on one of them the Department, last season, installed a pump which rendered excellent service.

The different fire ranging camps in the Nepigon Forest Reserve are connected with each other and with headquarters by telephone, some 125 miles of phone service being in operation. This phone service has been in operation several seasons and has proved of great value, fully justifying the expense incurred in its establishment.

Forest Fires in July-August.

On the 29th of July last, and the week following, a very destructive forest fire swept over the country in the vicinity of Matheson and Cochrane. It extended in a north-westerly direction along the Temiskaming and Northern Ontario Railway, through the townships of Bowman, Carr, Taylor, Walker, and part of Clergue, to Iroquois Falls Jct., and easterly, north-easterly and southerly through the townships of Hislop, Beatty, Munro, and other townships in part to the Abitibi river.

The fire destroyed nearly all the culverts, corduroy roads and small bridges built in previous years on the territory swept over, and several of the large bridges.

The fire extended easterly along the Porcupine Branch of the T. & N. O. Rly. to the Abitibi river, burning practically everything in its course—settlers' homes

and crops, part of the plant of the Abitibi Pulp and Paper Co., and part of the town of Iroquois Falls.

The weather for three weeks previous to the 29th of July had been extremely hot and dry, with high winds. The fire started at almost every point of the compass—in the settlers' clearings, and cut over pulp lands—in many places started from unknown causes, in most instances, however, where settlers had been burning off new clearings. The townships around Matheson, although partly burned over on three previous occasions, were again fire swept. Farm buildings and crops were completely destroyed, but the saddest part of all was the great loss of life. The fires and storms of previous years had levelled down the large timber, forming windfalls around the swamps. The flames swept from one farm clearing to another; fields of grain and swamps formed no barriers or protection. Township after town-

The Town of Matheson after the fire of July, 1916.

ship was burned over and even the virgin forest in places was left practically ready for the plow.)

This fire burned on both sides of the T. & N. O. Rly., from Ramore, south to Matheson, north to Porquois Jct., and on both banks of the Black river, completely destroying the villages of Kelso, Nushka, part of Porquois Jct., part of Iroquois Falls, the town of Matheson, the business part of Cochrane, and nearly all the culverts, corduroy and small bridges on the trunk roads.

While this fire was burning a fire of less magnitude was burning around the town of Cochrane. It started near the south-west end of the town where settlers had been burning off their old fallows a few days previous. Every effort was made by the citizens of Cochrane and the fire brigade to extinguish this fire, but without avail. The business portion of the town was completely destroyed. The fire, however, did not extend far beyond the limits of the town. Numerous small fires

started at different points from unknown causes—chiefly, however, from settlers burning off their fallows—extended as far west along the Grand Trunk Pacific Rly. as the Frederickhouse river, as far east as the Abitibi river, and north about ten miles through part of the townships of Glackmeyer and Clute. Beyond the limits of the town of Cochrane a large number of settlers lost their buildings and crops; nearly all the culverts, corduroy roads and small bridges were burned. These fires swept over the country with great energy; it was almost impossible to save buildings or crops. The dry moss on the partially cleared lands and the debris left by the settlers when taking out pulpwood, carried the fires from point to point. Ten persons were burned to death a few miles north of Cochrane when attempting to reach a small lake.

Fires were started at different points along the Transcontinental as far west as

View of the fire-swept territory near Matheson the day following the fire, July, 1916.

Hearst (130 miles from Cochrane), started in most instances from settlers clearing their land. Several homesteads were burned out but no lives lost. These fires cleared up large areas of land and were in many instances of very great assistance to the settlers. Clearings were made which would have taken the settlers years to accomplish. In the vicinity of Hearst, along the line of railway, several culverts and small bridges were burned on roads lately constructed by this branch. As soon as the fire passed over immediate steps were taken to replace the culverts and bridges and remove the burned corduroy and regrade the roads.

In the vicinity of Matheson and Cochrane much of the available timber suitable for culverts and bridges was destroyed. Corrugated iron culverts had to be secured; one hundred of these have already been put in places and several of the smaller bridges on the more important roads renewed.

The store-houses and office of the Northern Development Branch were completely destroyed at Matheson, also part of the plant; the same at Cochrane with the exception of the office. Fortunately most of the plant was in use at the different outside camps and was not destroyed. The buildings were insured and the loss is not very great.

It will take some time, however, to put these roads in as good condition as they were before the fire. The fire, while it has destroyed many miles of corduroy road, will greatly assist in drainage in the future, having burnt off the moss on the surface which held the frost in the early spring. In this respect it will greatly improve the climatic conditions of the country besides clearing the land.

The intense heat and strong winds the last few days of July made it almost impossible to extinguish the settlers' fires, which had been burning for several days previous. Large sections of country in places have been almost completely denuded of timber and made ready for the plow. The total area burned over has, however, been much exaggerated.

This fire, had it not been for the tremendous loss of life, would not compare in magnitude with many fires that have taken place in the Province within the last fifty years. The fire of 1864, and later in '71, along the north shore of Lakes Superior and Huron, and that of '77 in the Parry Sound district, and that of '91 and '96 in he pine country west and north-west of Sudbury, were far more destructive from a financial standpoint than the recent fire at Matheson and Cochrane. Each covered a much greater area and destroyed greater values in timber. A much later fire, that of 1894, which swept over a large section of Northern Minnesota and crossed the Rainy river into the Rainy river Valley at Boudet, in which fire 140 lives were lost, six of them in the Rainy River Valley, it swept over several townships in the valley. This fire was in many respects similar to the Matheson and Cochrane fire; the country swept over was low and swampy, and at that time considered unfit for settlement. Much of it is now under cultivation and is considered one of the best agricultural sections in Northern Ontario.

Previous to and during the fire every assistance was given by the employees of the Northern Development Branch and other officials of the Department in putting out fires along the newly constructed roads. No further action on the part of the Government could have saved the situation. Owing to wet weather in previous seasons the settlers had been unable to clear off their land and were anxious to take advantage of every possible opportunity of clearing their lands when the weather was dry, as very little could be accomplished in clearing land of a character similar to that in the Clay Belt except in the dry season.

Colonization.

One of the many important changes made by the Government was the transfer of the Colonization Branch from the Department of Agriculture to this Department.

The work of the Branch is largely that of promoting and directing settlement, although it has been successful, in recent years, in bringing a large number of domestic servants and farm labourers to Ontario.

Settlement in Northern Ontario has been almost completely arrested by the war, and the drain of men from farms and industries has rendered an acute labour situation.

It was forseen that this was inevitable and will continue until the war is over and the men are released at the front. To prepare for this time and ensure that Ontario will receive a fair proportion of the exodus after the war is a problem to which the Colonization Branch is devoting careful and expert study.

For particulars and report of the colonization and immigration during the year see Appendix 35, page 103.

Crown Surveys.

The following Crown Surveys have been completed during this year:
Township of Owens, district of Timiskaming.
Township of Cody, district of Timiskaming.
Township of Forbes, district of Thunder Bay.
Township of Colenso, district of Kenora.
Township of Nepigon, additional, district of Thunder Bay.
Township of Hele, district of Thunder Bay.
Parts of townships of Hall, Joffre, Carew and Cavell, district of Sudbury.
Addition to the townships of Ware and Gorham, district of Thunder Bay.
Town plots of Grant and Armstrong, district of Thunder Bay.
Survey of tie line Kowkash Mining Division, district of Thunder Bay.
Survey and traverse of Lady Evelyn lake and islands, district of Timiskaming.
Survey and traverse of Peter Long lake, district of Timiskaming.
Survey of timber berths K 23 and 23a, district of Kenora.
Survey of part of Peninsula No. 2, township of Bosanquet, county of Lambton.
See Appendix No. 15, page 56.
For Crown Surveys in progress see Appendix No. 16, page 57.

Municipal Surveys.

Three municipalities petitioned for surveys and instructions were given authorizing the same. Several municipal surveys were confirmed during the year under R.S.O. Cap. 166, Sections 13 and 14, such surveys being final and conclusive.

Particulars relating to these will be found in appendices No. 17 and No. 18, pages No. 58 and No. 59.

The survey of Georgian Bay Islands was completed this year and the reports show that there are some 15,000 islands embraced within this territory. These islands have been placed in the market for disposal at a minimum charge of $10 per acre, together with a charge of $25 to cover cost of departmental survey.

To avoid speculation purchasers are required to expend $300 in improvements within eighteen months from date of sale. The accessibility to these islands by boat or launch has rendered them attractive to tourists.

Filing System.

The rapid increase in the volume of correspondence received and dispatched by the Department made it necessary to install a more efficient filing system. On January 1st, 1916, a complete change was effected.

Prior to this date the Department had used the "Folded" or "Document" system. This was found cumbersome, slow and entirely inadequate to meet the requirements of the Department. The files were kept in vaults in the various

branches and considerable time was found to be consumed in locating the various files.

After several months careful consideration and investigation it was decided to adopt the "Vertical" or "Flat File" system, and concentrate the files in one general filing room. These changes have all been effected and are working smoothly and satisfactorily.

For volume of correspondence handled by Record Branch see Appendix No. 13, page No. 50.

G. H. FERGUSON,
Minister.

Department of Lands, Forests and Mines,
Toronto, October 31st, 1916.

APPENDICES

Appendix No. 1.

Return of Officers and Clerks of the Department of Lands, Forests and Mines for the year ending October 31st, 1916.

Branch.	Name.	Designation.	When Appointed.	Salary per annum.	Remarks.
				$ c.	
	Hon. G. H. Ferguson	Minister	1914, Dec. 22	6,000 00	
	Albert Grigg	Deputy Minister	1915, Oct. 13	3,600 00	
	Geo. Kennedy	Law Clerk	1872, Feb. 1	2,900 00	Died June 16, 1916.
	C. C. Hele	Minister's Secretary and Secretary to Department	1912, Jan. 23	2,500 00	
	J. Farrington	Clerk	1916, Jan. 6	1,200 00	
	A. G. Thompson	do	1909, Mar. 24	825 00	
	M. Johnston	Stenographer	1915, Oct. 9	650 00	
Lands Branch	J. J. Murphy	Advisory Chief Clerk	1872, May 1	2,300 00	
	W. C. Cain	Chief Clerk	1903, Mar. 6	1,900 00	
	H. E. Johnston	Clerk of Military Grants	1907, Mar 13	1,600 00	
	W. R. Ledger	Clerk of Sales	1894, Feb. 5	1,450 00	
	S. Draper	Clerk of Free grants	1903, Jan. 1	1,350 00	
	S. A. Platt	Clerk	1907, Mar. 13	1,100 00	
	F. Lucas	do	1909, Mar. 24	1,100 00	
	J. E. Drinkwater	do	1916, May 3	950 00	
	N. MacQueen	Stenographer	1909, Mar. 24	725 00	
	M. Bengough	do	1896, Oct. 23	750 00	
	J. C. Oram	do	1907, Jan. 16	725 00	
	E. F. O'Neil	do	1904, Nov. 9	725 00	
	E. G. Halliday	do	1909, Mar. 24	725 00	
	B. M. Benson	do	1911, Mar. 3	625 00	
	E. Hills	do	1916, May 3	600 00	
Surveys and Patents	G. B. Kirkpatrick	Director	1866, Jan. 30	2,700 00	
	L. V. Rorke	Assistant Director	1909, May 5	2,600 00	
	J. Hutcheon	Surveyor and Draughtsman	1913, May 20	2,150 00	
	W. F. Lewis	Clerk	1872, Feb. 5	1,400 00	
	D .G. Boyd	Draughtsman	1897, Sept. 27	1,650 00	
	E. M. Jarvis	Clerk	1904, Oct. 19	1,400 00	
	J. B. Proctor	do	1897, Jan. 15	1,200 00	
	B. Rushford	Draughtsman	1912, Oct. 5	1,000 00	
	F. E. Blanchet	Clerk	1907, Mar. 13	1,100 00	
	A. Leaman	do	1909, Mar. 24	1,100 00	

Surveys and Patents ...	H. Treeby	Draughtsman	1904, Jan. 13....	1,250 00	
	J. Work	do	1911, Mar. 3....	1,250 00	
	H .M. Kirkland	Stenographer	1904, Nov. 23....	725 00	
	C. O'Connor	do	1911, Mar. 3....	625 00	
	E. C. Armer	do	1911, Mar. 3....	625 00	
	C. S. Jones	Clerk of Patents	1890, May 22....	2,050 00	
	W. S. Sutherland	Engrossing Clerk	1902, Jan. 13....	1,350 00	
	C. E. Burns	Reference Clerk	1900, Apr. 9....	1,450 00	
	W. Carrell	Engrossing Clerk	1904, Jan. 15....	1,250 00	
	A. E. Robillard	do do	1894, May 8....	1,000 00	
	A. E. Roe	Clerk of Registers	1909, Mar. 24....	1,250 00	
Woods and Forests	J. A. G. Crozier	Advisory Chief Clerk	1867, Dec. 1....	2,300 00	
	J. Houser	Chief Clerk	1907, Mar. 13....	1,800 00	
	J. B. Cook	Clerk	1898, Aug. 1....	1,750 00	
	H. Gillard	do	1900, Apr. 9....	1,500 00	
	F. J. Niven	do	1903, Mar. 6....	1,350 00	
	W. F. Trivett	do	1904, Jan. 13....	1,300 00	
	R. H. Hodgson	do	1904, Nov. 23....	1,200 00	
	A. H. O'Neil	do	1909, Mar. 24....	1,000 00	
	G. W. Harris	do	1909, Mar. 24....	1,000 00	
	N. L. Rogers	do	1911, Nov. 2....	1,050 00	
	S. D. Meeking	do	1910, May 12....	900 00	
	E. H. Squires	do	1916, Apr. 6....	960 00	
	E. H. Telfer	do	1916, Apr. 6....	800 00	
	C. Rowland	Stenographer	1915, Mar. 23....	700 00	
	W. A. Fleming	do	1915, Feb. 16....	600 00	
	M. E. Bliss	do	1909, Sep. 1....	775 00	
	H. Canton	do	1915, Oct. 9....	625 00	
Accounts	D. G. Ross	Accountant	1861, Apr. 15....	2,550 00	
	H. M. Lount	Clerk	1904, Jan. 13....	1,550 00	
	C. J. Clarke	do	1907, Mar. 13....	1,150 00	
	R. Gordon	do	1913, Apr. 30....	850 00	
	W. A. Burritt	do	1908, Apr. 8....	1,150 00	
	C. Bowland	Clerk and Stenographer	1911, Mar. 3....	700 00	
	F. Yeigh	Registrar	1880, Mar. 1....	1,600 00	Resigned Aug. 1, 1916.
Forestry	E. J. Zavitz	Director	1912, Nov. 7....	2,600 00	
	F. S. Newman	Assistant Director	1913, Sep. 22....	1,600 00	
	J. Bald	Stenographer	1914, Oct. 28....	600 00	

Appendix No. 1.—Concluded.

Return of Officers and Clerks of the Department of Lands, Forests and Mines for the year ending October 31st, 1916.

Branch.	Name.	Designation.	When appointed.	Salary per annum.	Remarks.
				$ c.	
Colonization	H. A. Macdonell	Director	1912, Feb. 2	2,350 00	
	John Argue	Clerk	1908, Apr. 8	1,500 00	
	R. A. Jones	do	1909, Mar. 8	1,400 00	
	C. W. Garthwaite	do	1910, Nov. 4	1,100 00	
	H. Tutt	do	1911, Mar. 30	1,000 00	
	S. O. Dennis	Clerk and Stenographer	1910, Nov. 4	700 00	
	R. Duggan	Stenographer	1910, Feb. 4	725 00	
	F. R. Dunlop	do	1912, Dec. 17	650 00	
	B. McDonald	do	1911, Mar. 30	700 00	
Record Branch	S. K. Burdin	Chief Clerk	1916, Apr. 6	2,300 00	
	C. Dies	Clerk	1907, Mar. 13	1,250 00	
	A. P. Saunders	do	1913, Apr. 30	1,000 00	
	C. W. St. John	do	1910, Apr. 14	1,000 00	
	A. Ferguson	do	1916, Apr. 6	960 00	
	W. B. Baines	do	1912, Oct. 5	950 00	
	F. Samuels	do	1909, Mar. 24	925 00	
	H. Brophy	Mailing Clerk	1898, Oct. 1	1,000 00	
Bureau of Mines	T. W. Gibson	Deputy Minister	1891, June 19	4,000 00	
	R. D. Fisher	Secretary	1907, Mar. 13	1,350 00	
	D. H. Barr	Clerk	1907, Mar. 13	1,150 00	
	F. L. Godson	do	1915, June 18	900 00	
	W. Lemoine	do	1908, Apr. 8	1,150 00	
	Anne Moffatt	do	1901, Mar. 1	1,100 00	
	A. G. Scovell	do	1909, Mar. 24	1,050 00	
	Ethel Craig	Clerk and Stenographer	1906, May 16	800 00	
	F. McDougall	do do	1907, Mar. 13	725 00	
	J. L. McNaughton	do do	1909, Mar. 24	750 00	
	H. W. Batchelor	Stenographer	1911, Dec. 19	650 00	

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 2.

List of Agents for the year ending October 31st, 1916.

Name.	Post office address	District or County.	Date of appointment.	Salary per annum.	Remarks.
		Land Agents.		$ c.	
Anderson, T. V.	Hearst	Part District of Algoma	1913, May 9	500 00	
Arthurs, E.	Espanola Mills...	do do do	1915, May 7	200 00	
Baker, R. H.	Minden	Part of Victoria	1907, Oct. 1	350 00	
Bolger, J. W.	New Liskeard....	Lake Temiskaming, District of Nipissing..	1913, July 17	700 00	
Both, C.	Denbigh	Part of Frontenac and Addington	1905, Oct. 20	200 00	
Brown, John	Markstay	Part of District of Nipissing and Sudbury.	1916, June 27	500 00	
Burrows, W. A.	Port Arthur.....	Part District of Thunder Bay	1912, Jan. 30	700 00	
Byers, R. J.	Massey	do do Sudbury	1905, July 3	500 00	Died March 22nd, 1916.
Cameron, W.	Stratton Station..	do do Rainy River	1911, April 27	500 00	
Campbell, I. M.	Parry Sound.....	do do Parry Sound	1914, Nov. 12	500 00	
Dempsay, S. J.	Cochrane	do do Nipissing	1911, Feb. 9	600 00	
Dodds, T.	Thessalon	do do Algoma	1915, May 4	300 00	
Douglas, W. J.	Greenview	do Hastings	1912, June 12	500 00	
Ellis, H. J.	Powassan	Part District of Parry Sound	1909, May 21	500 00	
Flesher, H. H.	Massey	do do Sudbury	1916, May 3	500 00	
Freeborn, Dr. J. S. .	Magnetawan	do do Parry Sound	1905, Nov. 10	500 00	
Gibson, J. E.	Dryden	District of Rainy River	1914, Nov. 20	500 00	
Ginn, F. E.	Matheson	Part District of Nipissing	1912, Mar. 20	600 00	
Hales, W.	Apsley	do County of Peterborough	1911, July 20	250 00	
Hollands, C. J.	Fort Frances.....	Part Townplot of Alberta and part District of Rainy River	1892, Oct. 12	300 00	
Jenkin, W.	Emsdale	Part District of Parry Sound	1908, July 29	500 00	
Langlois, E.	Warren	do do Sudbury	1911, April 4	500 00	Removed June 14th, 1916.
Lemieux, J. A.	Blezard Valley ..	do do do	1908, June 26	400 00	Resigned July 31st, 1916.
McFayden, A.	Emo	do do Rainy River	1905, Sept. 8	500 00	
MacLennan, J. K. ..	Sudbury	do do Sudbury	1905, July 3	500 00	
Noble, E.	Sault Ste. Marie..	do do Algoma	1913, Feb. 1	300 00	
Parsons, W. J.	North Bay.....	do do Nipissing	1908, April 8	500 00	
Philion, J. A.	Sturgeon Falls....	do do do	1907, Sept. 13	500 00	
Prince, A.	Wilno.....	Part of Renfrew	1905, July 12	500 00	

Appendix No. 2.—Concluded.

List of Agents for the year ending October 31st 1916.—*Continued.*

Name.	Post office address	District or county.	Date of appointment.	Salary per annum.	Remarks.
		Land Agents—Continued.		$ c.	
Small, R.	Mattawa	Part District of Nipissing	1910, June 30	500 00	
Spry, W. L.	Kenora	do do Rainy River	1909, Sept. 21	400 00	Also Mining Recorder.
Watt, F.	Pembroke	Part of Renfrew	1913, May 28	300 00	
Whybourne, W. E.	Marksville	Part of St. Joseph Island	1905, April 7	250 00	
Wilson, A. N.	Kinmount	Part of Peterborough	1915, June 1	175 00	
Woollings, J.	Englehart	Part of District of Nipissing	1908, June 30	600 00	
		Homestead Inspectors.			
Barr, J.	Fort Frances	District of Rainy River	1906, Nov. 23	1,200 00	
Bastien, J. A	Chelmsford	W. Part of Sudbury District	1913, May 2	600 00	
Brown, J. B.	Bracebridge	Muskoka District	1905, July 28	1,000 00	Also Crown Land Agent.
Burnes, C. W.	Sundridge	Parry Sound District	1905, Nov. 15	900 00	
Cragg, W. V.	New Liskeard	S. Part of Temiskaming District	1913, Mar. 27	1,200 00	
Dean, T.	Sault Ste. Marie	Algoma District	1908, July 29	600 00	
Hughes, T.	Murillo	Thunder Bay District	1908, July 20	800 00	
Poole, E. G.	Porquis Jct.	Part Temiskaming District	1916, Sept. 12	1,200 00	
Quenneville, I.	Sturgeon Falls	E. Part Sudbury and W. Part Algoma Districts	1906, May 7	600 00	
Smith, D.	Cochrane	N. Part Temiskaming District	1912, April 16	1,000 00	
Watson, T. P.	Englehart	Centre Part of Temiskaming district	1905, May 10	1,000 00	
Wigle, R. G.	Dryden	Kenora District	1914, May 27	1,000 00	
		Timber Agents.			
Bremner, G.	Cochrane	Part Temiskaming and Algoma Districts	1913, May 20	1,300 00	
Christie, W. P.	Parry Sound	Part Parry Sound and Muskoka Districts	1903, Dec. 4	1,600 00	
Darby, E. J.	Ottawa	Part Ottawa District	1889, July 26	1,500 00	
Hawkins, S. J.	Webbwood	Part Algoma and Sudbury Districts	1905, Aug. 16	1,500 00	
Henderson, C.	Sudbury	do do	1902, Jan. 1	1,800 00	
Johnson, S. M.	Arnprior	Part Ottawa and Parry Sound Districts	1907, Jan. 11	1,600 00	
MacDonald, S. C.	New Liskeard	Part Temiskaming District	1910, Sept. 27	1,600 00	

						$ c.	
Margach, W.	Kenora	Kenora District	1889,	May	16	1,600 00	
Maughan, J.	Sault Ste. Marie..	Part District of Algoma	1903,	Dec.	9	1,500 00	Died October 26th, 1916.
McDonald, H.	Thessalon	do do do	1905,	April	20	1,500 00	
McDougall, J. T.	North Bay	Nipissing and Part Sudbury District	1908,	July	8	1,600 00	
Oliver, J. A.	Port Arthur	Thunder Bay District	1905,	Sept.	30	1,500 00	
Stevenson, A.	Peterborough	Belleville	1905,	Oct.	4	1,500 00	
Watts, G.	Fort Frances	Rainy River District	1910,	April	19	1,500 00	
		Mining Recorders.					
Browning, A. J.	Elk Lake	Montreal River Mining Division	1913,	July	15	1,100 00	
Campbell, C. A.	Sudbury	Sudbury Mining Division	1910,	Jan.	6	900 00	
Gauthier, G. H.	Porcupine	Porcupine Mining Division	1912,	July	16	1,500 00	
Hough, J. A.	Matheson	Larder Lake Mining Division	1907,	May	22	1,200 00	
Miller, N.	Sault Ste. Marie..	Sault Ste. Marie Mining Division	1915,	June	9	1,000 00	
Morgan, J. W.	Port Arthur	Port Arthur Mining Division	1906,	Dec.	28	1,000 00	
Morgan, M. R.	Tashota	Kowkash Mining Division	1916,	Mar.	10	900 00	
McAulay, N. J.	Haileybury	Temiskaming Mining Division	1915,	May	8	1,800 00	
McQuire, H. F.	Parry Sound	Parry Sound Mining Division	1906,	Sept.	26	500 00	
Sheppard, H. E.	Elk Lake	Gowganda Mining Division	1909,	Feb.	10	1,000 00	
Skill, A.	Elk Lake	Montreal River Mining Division	1909,	April	1	1,200 00	
Spry, W. L.	Kenora	Kenora Mining Division	1909,	Sept.	21	750 00	
		Emigration Agents.					
Reid, R.	London	England	1913,	Feb.	7	5,000 00	
Clark, J. M.	London	do	1913,	Mar.	17	1,800 00	
Thompson, J.	London	do	1906,	Jan.	24	1,800 00	

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 3.

Statement of Lands Sold and Leased. Amount of Sales and Leases and Amount of Collections for the year ending October 31st, 1916.

Service.	Acres sold and leased.	Amount of sales and leases.	Collection on sales and leases.
		$ c.	$ c
Lands Sold:			
Agricultural and Townsites	98,209.02	66,815 98	83,533 03
Mining	14,592.11	37,756 28	36,457 56
University Mining	80.75	242 26	121 13
Clergy	.....	.....	1,692 32
Common School	50 00	70 00	3,760 48
University	2,967.50	1,483 75	1,518 51
Lands Leased:			
Mining	5,858.04	5,858 04	16,218 36
Crown	11,689 59	1,170 87	50,756 43
	133,447.01	$113,397 18	$194,057 82

D. GEO. ROSS,
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ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 4.

Statement of Revenue of the Department of Lands, Forests and Mines for the year ending October 31st, 1916.

Service.	c.	$ c.	$ c
LAND COLLECTIONS.			
Crown Lands:			
Agricultural	79,598 75		
Townsites	3,934 28		
		83,533 03	
Mining Sales	36,457 56		
University Mining Sales	121 13		
		36,578 69	
		120,111 72	
Clergy Lands	1,692 32		
Common School Lands	3,760 48		
University Lands	1,518 51		
		6,971 31	
Mining Leases	16,218 36		
Crown Leases	50,756 43		
		66,974 79	
Miners' Licenses	27,264 75		
Permits	960 00		
Recording Fees	38,682 23		
		66,906 98	
Royalties		15,083 52	
Supplementary Revenue:			
Acreage Tax	12,657 38		
Profit Tax	140,559 60		
Gas Tax	33,610 14		
		186,827 12	
			462,875 44
WOODS AND FORESTS.			
Bonus		419,827 94	
Timber Dues		822,332 81	
Ground Rent		89,520 03	
Transfer Fees		3,640 00	
			1,335,320 78
Provincial Assay Fees	744 75		
Casual Fees	1,216 43		
Cullers' Fees	48 00		
		2,009 18	
Algonquin Provincial Park	3,912 49		
Quetico Provincial Park	180 98		
Forest Reserves	767 50		
		4,860 97	
			6,870 15
REFUNDS.			
Fire Ranging		40,357 11	
Wood Ranging		10,383 18	
Algonquin Park, Cleaning Right-of-Way		3,427 48	
Colonization Revenue		1,127 23	
Contingencies		122 85	
Emigration Work in Great Britain		56 95	
Mines and Mining		11 20	
Salaries and Expenses		2 00	
Surveys		3 00	
			55,491 00
			$1,860,557 37

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 5.

Statement of Receipts of the Department of Lands, Forests and Mines for the year ending October 31st, 1916, which are considered as Special Funds.

Service.	$ c.	$ c.
Clergy Lands.		
Principal	874 35	
Interest	817 97	
		1,692 32
Common School Lands.		
Principal	1,838 62	
Interest	1,921 86	
		3,760 48
University Lands.		
Principal	1,248 95	
Interest	269 56	
		1,518 51
		$6,971 31

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 6.

Statement of Disbursements of the Department of Lands, Forests and Mines for the year ending October 31st, 1916.

Service.	$ c.	$ c.	$ c.
AGENTS' SALARIES AND DISBURSEMENTS.			
Land, $17,251.77.			
Anderson, T. V.	500 00		
Disbursements	21 03		
		521 03	
Arthurs, E.	.....	200 00	
Baker, R. H.		350 06	
Bolger, J. W.	700 00		
Disbursements	74 50		
		774 50	
Both, C.	.....	200 00	
Brown, J. B.	1,000 00		
Disbursements	109 45		
		1,109 45	
Brown, J.	172 90		
Disbursements	3 78		
		176 68	
Burrows, W. A.	700 00		
Disbursements	101 80		
		801 80	
Byers, R. J.	257 59		
Disbursements	2 15		
		259 74	
Cameron, W.	500 00		
Disbursements	47 00		
		547 00	
Campbell, Miss I. M.	500 00		
Disbursements	13 00		
		513 00	
Dempsay, S. J.	600 00		
Disbursements	57 55		
		657 55	
Dodds, T.	300 00		
Disbursements	3 00		
		303 00	
Douglas, W. J.	500 00		
Disbursements	12 00		
		512 00	
Ellis, H. J.	.....	500 00	
Flesher, H. H.	.....	241 61	
Freeborn, Dr. J. S.	500 00		
Disbursements	7 90		
		507 90	
Gibson, J. E.	500 00		
Disbursements	70 00		
		570 00	
Ginn, F. E.	600 00		
Disbursements	518 20		
		1,118 20	
Hales, W.	.....	250 00	
Hollands, C. J.	.....	300 00	
		10,413 46	

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward	.....	10,413 46	
AGENTS' SALARIES AND DISBURSEMENTS.—*Continued.*			
Land.—Concluded.			
Jenkin, W.	500 00		
Disbursements	6 05	506 05	
Langlois, E.	312 30		
Disbursements	9 78	322 08	
Lemieux, J. A.	.....	300 00	
McFayden, A.	500 00		
Disbursements	52 30	552 30	
MacLennan, J. K.	.....	500 00	
Noble, E.	300 00		
Disbursements	7 20	307 20	
Parsons, W. J.	500 00		
Disbursements	21 00	521 00	
Philion, J. A.	500 00		
Disbursements	19 68	519 68	
Prince, A.	500 00		
Disbursements	18 75	518 75	
Small, R.	500 00		
Disbursements	16 00	516 00	
Spry, W. L.	400 00		
Disbursements	488 75	888 75	
Watt, F.	.....	300 00	
Whybourne, W. E.	250 00		
Disbursements	9 00	259 00	
Wilson, A. N.	175 00		
Disbursements	12 50	187 50	
Woollings, J.	600 00		
Disbursements	40 00	640 00	
Homestead Inspectors, $12,593.23.			
Barr, J.	1,200 00		
Disbursements	691 10	1,891 10	
Bastien, J. A.	600 00		
Disbursements	288 17	888 17	
Burnes, C. W.	900 00		
Disbursements	209 95	1,109 95	
Cragg, W. V.	1,200 00		
Disbursements	226 96	1,426 96	
		22,567 95	

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		22,567 95	
AGENTS' SALARIES AND DISBURSEMENTS.—*Continued.*			
Homestead Inspectors.—Concluded.			
Dean, T.	600 00		
Disbursements	45 65		
		645 65	
Hughes, T.	800 00		
Disbursements	402 35		
		1,202 35	
Poole, E. G.	.....	300 00	
Quenneville, I.	600 00		
Disbursements	342 20		
		942 20	
Smith, D.	1,000 00		
Disbursements	240 70		
		1,240 70	
Watson, T. P.	1,000 00		
Disbursements	422 15		
		1,422 15	
Wigle, R. G.	1,000 00		
Disbursements	524 00		
		1,524 00	
Timber, $29,402.13.			
Bremner, G.	1,300 00		
Disbursements	439 45		
		1,739 45	
Christie, W. P.	1,600 60		
Disbursements	228 05		
		1,828 05	
Hawkins, S. J.	1,500 00		
Disbursements	363 99		
		1,863 99	
Henderson, C.	1,800 00		
Webster, W. A., Assistant	1,600 00		
Disbursements	346 00		
		3,746 00	
Johnson, S. M.	1,600 00		
Disbursements	142 47		
		1,742 47	
MacDonald, S. C.	1,600 00		
Disbursements	187 84		
		1,787 84	
Margach, W.	1,600 00		
Legris, J., Assistant	1,300 00		
Disbursements	1,134 27		
		4,034 27	
Maughan, J.	1,500 00		
Disbursements	388 75		
		1,888 75	
McDonald, H.	1,500 00		
Disbursements	438 31		
		1,938 31	
McDougall, J. T.	1,600 00		
Disbursements	710 54		
		2,310 54	
Oliver, J. A.	1,500 00		
Disbursements	1,030 92		
		2,530 92	
Stevenson, A.	1,500 00		
Disbursements	436 46		
		1,936 46	
		57,192 05	

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		57,392 05	
AGENTS' SALARIES AND DISBURSEMENTS.—*Concluded.*			
Timber.—Concluded.			
Watts, G.	1,500 00		
McDonald, A., Assistant	265 18		
Disbursements	289 90		
		2,055 08	
Miscellaneous, $1,373.08.			
Bilton, G., Caretaker Islands in North and South Crosby		25 00	
Foster, F., Inspector of the Townships of Hanna and St. Johns		47 50	
Jamieson, W. H., Caretaker Islands in Dog and Laboria Lakes		50 00	
McArthur, T. A., Inspector of Agencies	600 00		
Disbursements	605 40		
		1,205 40	
Stewart, J. A., Disbursements re Inspection of the Township of St. Johns		45 18	
			60,620 21
OTTAWA AGENCY.			
Darby, E. J., Agent		1,500 00	
Larose, S. C., Clerk		1,000 00	
Rent	700 00		
Disbursements	83 70		
		783 70	
WOOD RANGING.			3,283 70
Acheson, Ira M.		70 00	
Allen, R. A.		815 00	
Allen, Geo.		75 00	
Ansley, W. E.		535 00	
Arnill, Wm.		1,135 00	
Bailey, S. J.		525 00	
Bailey, Alex.		180 00	
Barrett, Thos.		914 00	
Bedard, E.		306 00	
Berlinquette, J.		352 00	
Bliss, L. E.	655 00		
Disbursements	170 61		
		825 61	
Boyer, P.		248 50	
Bremner, G. A. Disbursements		16 75	
Bromley, T.		650 00	
Brooks, W. J.		635 00	
Buchan, S.		361 00	
Buisson, Wm.		650 00	
Cameron, John		460 00	
Cameron, John		204 00	
Canore, Joe		30 00	
Carnfel, T.		387 00	
Carter, Geo.		488 00	
Castonguay, A. C.		655 00	
Chenier, D. A.		1,380 00	
Clairmont, E.		576 00	
Clapson, H.		255 00	
Close, R. J.		175 75	
Cloud, Wm.		248 50	
Cole, R.		187 62	
Comer, B. F.		368 00	
Carried forward		13,708 73	63,903 91

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		13,708 73	63,903 91
WOOD RANGING.—*Continued.*			
Connelly, Dan		680 00	
Corrigan, R. T.		935 00	
Coyne, Phin		770 00	
Cross, R. J.		372 00	
Darling, J. M.		855 00	
Decarey, E.		15 00	
Deneen, M.		30 00	
Descoteaux, H.		9 00	
Didier, H.		910 00	
Dougherty, J. M.		512 00	
Doxsee, J. E.		1,010 00	
Dunn, J. F.		235 00	
Dunn, Wm.		285 00	
Durrell, Wm.		1,420 00	
Duval, C. A.	690 00		
Disbursements	5 50		
		695 50	
Dyson, I.		258 00	
Emlaw O.		595 00	
Fairbairn, N. H.		731 00	
Ferguson, A. E.		1,100 00	
Fisher, Geo.		440 00	
Fletcher, M.		494 00	
Fraser, D.		1,180 00	
Fraser, T.		24 00	
Fraser, Don.		93 00	
Fraser, W. A.		95 00	
Gamey, W. H.		445 00	
Ganton, D.		85 00	
Gilligan, E. J.		535 00	
Gordon, I. B.		372 00	
Gordon, Joseph		287 50	
Hagan, E. G.		760 00	
Haines, B.		294 00	
Hand, T.	348 00		
Disbursements	61 15		
		409 15	
Hart, I.		766 00	
Hartley, C.		1,230 00	
Hauralty, P.		291 00	
Hawkins, W.		92 00	
Hawkins, S. J. ..... Disbursements..		39 90	
Henderson, A. E.		885 00	
Henderson, A. E.		875 00	
Henderson, Chas. ..... Disbursements..		473 05	
Henderson, L.		553 00	
Henderson, L. E.		30 00	
Henderson, J.		365 75	
Hey, Ben.		324 00	
Hindson, C. E. ..... Disbursements..		35 35	
Hoff, J. S. M.		56 00	
Hogarth, J.		670 00	
Hornick, Geo.		38 00	
Huckson, Alf.		48 75	
Hudson, R.		187 50	
Hurdman, W. H.		725 00	
Hutton, J.		1,140 00	
Jamieson, J.		180 00	
Jones, W.		328 00	
Carried forward		39,973 18	63,903 91

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		39,973 18	63,903 91
WOOD RANGING.—*Continued.*			
Kernahan, G. A.		444 00	
Lamon, Wm.		88 00	
Lapoint, James		63 00	
Laundry, H.		82 50	
Leblanc, E.		30 00	
Lee, J. B.		975 00	
Legris, J. ....Disbursements..		15 80	
Leishman, E.		490 00	
Lepage, L.		42 00	
LeRoy, Levi		558 50	
Long, H. E.	905 00		
Disbursements	9 05		
		914 05	
Lowe, W. C.		216 00	
Macdonell, R. D.		535 00	
MacGillivray, G.		349 00	
Manice, Wm.		1,270 00	
Margach, Wm. ....Disbursements..		1,353 68	
Margach, J. A.		510 00	
Marr, H. S.		24 00	
Marsh, Ed.		230 00	
Maughan, J. ....Disbursements..		101 19	
Menzies, A.	1,620 00		
Disbursements	402 75		
		2,022 75	
Mercier, Ed.		292 50	
Milway, J. H.		837 00	
Miniece, Wm.		70 00	
Molyneaux, G.		610 00	
Mongrain, Fred		17 50	
Mooney, L.	1,710 75		
Disbursements	597 25		
		2,308 00	
Moran, A.		1,700 00	
Morel, H.		448 00	
Murray, Wm.		1,669 00	
Murray, Earl		292 50	
Murray, James		448 50	
Murray, Thos.		172 50	
Murray, John		17 25	
McAulay, W. D.		780 00	
McCaw, J. G.		1,565 00	
McCaw, J. E.		935 00	
McCuaig, J. A.		391 00	
McCuaig, Roy		323 00	
McDonald, J. D.		1,700 00	
McDonald, H. ....Disbursements..		4 50	
McDougall, J. T. ....Disbursements..		33 70	
McFarlane, J. A.		292 50	
McFarlane, Alex.		437 00	
McGillivray, D. D.		360 00	
McGregor, Wm.		360 00	
McGuire, C.	420 00		
Disbursements	25 05		
		445 05	
McIvor, J. A.		1,132 00	
McKelvy, J.		18 00	
McKendry, W. B.		55 00	
McLaughlin, J.		332 50	
McLean, J.	1,615 00		
Disbursements	162 75		
		1,777 75	
Carried forward		70,112 40	63,903 91

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		70,112 40	63,903 91
WOOD RANGING.—*Concluded.*			
McLeod, Wm.		30 00	
McManemun, C.		442 75	
McNabb, A.		970 00	
McPherson, J. S.		1,435 00	
McRae, D. A.		588 00	
Nault, J.		184 00	
Nelson, P.		87 00	
Nevinson, W. H.		280 00	
Nicoll, Geo.		288 75	
Niblet, Jas.		100 00	
Oliver, J. A. ....Disbursements..		829 10	
Payment, Paul		372 00	
Pelton, F.		228 25	
Pigott, J.		870 00	
Quinn, A.		387 00	
Reid, J.		1,0 5 00	
Ricard, A.		186 00	
Ridley, R.		1,410 00	
Ritchie, J. F.		920 00	
Ross, S.		1,067 50	
Ryan, Jas.		376 00	
Sharpe, Jas.		930 00	
Shaw, A.		940 00	
Shaw, D.		296 00	
Simpson, Wm.		1,115 00	
Smith, J. D. C.		372 00	
Smith, Geo.		370 50	
Snyder, F.		294 00	
Spavin, John		250 00	
Spence, D.		1,565 00	
Spofford, Thos.		112 50	
Squires, John		14 25	
Stein, P.	1,232 31		
Disbursements	195 00		
		1.427 31	
Talouse, B.		270 00	
Thompson, W. B.		540 00	
Thorburn, D.		250 00	
Tichborne, A.		600 00	
Urquhart. A.		1.115 00	
Vanderburg, N.		64 00	
Vincent, H. T.		1,650 00	
Watts, Geo. ....Disbursements..		34 35	
Webster, W. A. ....Disbursements..		423 06	
Western, C.		700 00	
Whelan, P. J.		1,700 00	
Wilkins, G. N.		745 00	
Wilson, D.	1,188 25		
Disbursements	32 70		
		1,220 95	
Wilson, C.		6 00	
Windle, J.		189 00	
Wisseau, E.		190 00	
Wisseau, L.		150 00	
Wood, W. D.		735 00	
Wylie, B. M.		400 00	
Young, R. J.		695 00	
Young, J. J.		361 00	
Yuill, Thos.		340 00	
			102,293 67
Carried forward			166,197 58

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward			166,197 58
EXPLORATION AND ESTIMATION OF TIMBER BERTHS.			
Henderson, Chas. ....Disbursements..		500 00	
Maughan, Jos. ....Disbursements..		500 00	
Oliver, J. A. ....Disbursements..		148 95	
			1,148 95
FIRE RANGING.			
Acheson, I. M.		327 50	
Adams, Alex.		380 00	
Adair, Robt.		372 50	
Allen, R. A.		920 00	
Allen, David		337 50	
Anderson, Ollie		372 50	
Armstrong, W. H.		365 00	
Armstrong, E. L.		357 50	
Arnold, D. O.		362 50	
Ashby, L. P.		372 50	
Bailey, H.		415 00	
Baird, C.		65 00	
Baker, J. A.		305 00	
Barrie, T.		340 00	
Bates, R.		376 75	
Beach, F. C.		352 50	
Beddome, W. E.		85 00	
Belcher, E. D.		375 00	
Bevan, S. W.		347 50	
Bilow, J. W.		372 50	
Blair, Geo.	840 00		
Disbursements	451 81		
		1,291 81	
Bliss, L. E. ....Disbursements..		1,068 14	
Bookhout H.		367 50	
Boivin, John		300 00	
Boucher, C.		377 50	
Bowers, G.		352 50	
Bowins, J.		330 00	
Bowland, J. J.	568 00		
Disbursements	94 45		
		662 45	
Bowles, John		302 50	
Bradley, E. M.		352 50	
Brant, Geo.		312 50	
Brewer, A.		372 50	
Brown, Aug.		327 50	
Brown, T. E.		375 00	
Brum, A. W.		840 00	
Bulmer, A.		350 00	
Bunting, H. T.		370 00	
Caldwell, C. N.		352 50	
Campbell, D.		402 50	
Campbell, T. J.		337 50	
Cambell, Wm.		347 50	
Campbell,R. A.		347 50	
Campbell, Alex.		310 00	
Canfield, H.		84 00	
Case, G. H.		315 00	
Case, Geo.		376 40	
Caslick, Wm.		345 00	
Canadian Express Company ....Express..		18 63	
Chambers, T.		367 50	
Chaffey, Wm.		372 50	
Chausse, A.		265 00	
Carried forward		19,795 68	167,346 53

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		19,795 68	167,346 53
FIRE RANGING.—*Continued.*			
Chapman, Wm.		407 50	
Childs, Jas.		347 50	
Christie, W. P. ....Disbursements..		371 49	
Christie, Geo.		337 50	
Clark, H.		335 00	
Clary, J. H.		295 00	
Connell, Wm.		387 50	
Cole, W. M.		352 50	
Cook, F. H.		371 25	
Corman, H. E.		347 50	
Cottman, J. T.		352 50	
Cone, Phin	840 00		
Disbursements	226 01		
		1,066 01	
Crawford, John		372 50	
Craig, J.		320 00	
Crass, W. E.		135 00	
Crosbie, W. R.		335 00	
Culen, W. F.		377 50	
Davidson, Ira		342 50	
Dean, A.		352 50	
Dennie, F. J.		504 00	
Derouard, M.		200 00	
Didier, L. P.		840 00	
Donio, J.		365 00	
Douglas, J. R.		347 50	
Dowd, H. L.		360 00	
Doyle, James		382 50	
Durnin, C. S.		612 00	
Durocher, F.		160 00	
Dusang, A.		376 75	
Eilber, Geo.		377 50	
Elliott, W. J.		347 50	
Elliott, J.		347 50	
Elliott, C. H.		347 50	
Ellis, E. C.		377 50	
Ellsworth, C. B.		315 00	
Evans, A.		367 50	
Fairburn, N. H.		335 00	
Favereau, Geo.		380 00	
Ferguson, T.		392 50	
Ferguson, Angus		347 50	
Ferguson, Archie		347 50	
Ferguson, Geo.		380 00	
Fisher, Geo.		800 00	
Fletcher, N.		285 00	
Fraser, A. E.		340 00	
Fraser, Gordon		345 00	
Fraser, W. A.		342 50	
Fowlie, Wm.		365 00	
Fox, A.		352 50	
Gagne, F.	900 00		
Disbursements	232 00		
		1,132 00	
Gale, J. E.		315 00	
Gamble, Wm.		295 00	
Garrow, J.		322 50	
Garrow, James		367 50	
Carried forward		41,074 18	167,346 53

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		41,074 18	167,346 53
FIRE RANGING.—*Continued.*			
Gault, J.		342 50	
Gauthier, Theo.		380 00	
Gemmill, John	568 00		
Disbursements	196 70		
		764 70	
Gorman, D.		340 00	
Grant, B. A.		377 50	
Guthrie, Wm.		382 50	
Hamon, F.		377 50	
Hand, Thos.		568 00	
Harris, C.		354 75	
Haskins, W.		342 50	
Henderson, J.		262 50	
Henderson, C. Disbursements		84 00	
Hey, Ben		840 00	
Hill, E.		12 50	
Hindson, C. E. Disbursements		51 16	
Hopkins, R. D.		342 50	
House, O.		160 00	
Huckson, A. H.	1,600 00		
Disbursements	183 74		
		1,783 74	
Hume, O. B.		250 00	
Humphreys, E.		345 00	
Humphries, S.		315 00	
Hunter, H.		335 00	
Hyde, Jas.		382 50	
Ireland, H.		260 00	
Irish, Wm.		330 00	
Irwin, T.		342 50	
Isbister, J. A.		360 25	
Jamieson, K. W.		342 50	
Jenkins, S.	642 00		
Disbursements	828 82		
		1,470 82	
Jerrett, E. L.		377 50	
Johnson, F.		360 00	
Johnson, Wm.		387 50	
Johnson, Alex.		365 00	
Johnston, John		382 50	
Jolicoure, P.		117 50	
Keenahan, Matt.		382 50	
Kelly, Timothy		380 00	
Keely, C. A.		357 50	
Kerr, A.		342 50	
Kiely, M.		337 50	
Kinney, Wm.		396 00	
King's Printer Supplies		650 70	
Kitchen, James		387 50	
Lalone, H.		330 00	
Langford, Thos.		382 50	
Lanktree, J.		375 00	
Lee, Jas. B.	815 00		
Disbursements	453 34		
		1,268 34	
Lee, E. J.		362 50	
Liddilcott, T.		347 50	
Lofquist, M.		372 50	
Carried forward		62,236 64	167,346 53

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		62,236 64	167,346 53
FIRE RANGING.—*Continued.*			
Long, H. E.	755 00		
Disbursements	325 88		
		1,080 88	
MacDonald, S. C. ..... Disbursements..		7 15	
MacDonald, M.		152 50	
MacDonell, L. P.		382 50	
Macdonell, R. D.		840 00	
MacGregor, W. H.	855 00		
Disbursements	938 93		
		1,793 93	
MacNeil, J. A.		375 00	
Maidens, W.		347 50	
Margach, Wm. ..... Disbursements..		870 39	
Margach, J. A.		476 00	
Martin, N.		342 50	
Martin, T.		305 00	
May, H.	795 00		
Disbursements	113 66		
		908 66	
Menard, H.		352 50	
Methodist Book and Publishing House.. Supplies.		25 15	
Metzger, P.		135 00	
Milway, J. H.		840 00	
Moir, A.		320 00	
Molyneaux, Geo.		572 00	
Moore, Chas.		357 50	
Moore, J. V.		342 50	
Morton, Wm.		365 00	
McAulay, W. D.		568 00	
McColl, John		352 50	
McColl, Wm.		352 50	
McCoy, L.		115 00	
McCullough, D. J.		382 50	
McDonald, A.		352 50	
McDonald, J.		317 50	
McDonald, C.		295 00	
McGregor, J. A.		372 50	
McIntosh, Jas.		370 00	
McKendry, W. B.		390 00	
McKinnon, H.		340 00	
McKinnon, E.		377 50	
McLeod, J. A.		330 00	
McLure, D.		352 50	
McMahon, C. E.		362 50	
McMaster, W.		42 50	
McMaster, J.		65 00	
McNiece, J. W.	375 00		
Disbursements	5 00		
		380 00	
McPhail, H.		347 50	
McRae, D. A.		426 00	
Neil, R. L.		367 50	
Neil, Wm.		165 00	
Neill, Joseph		372 50	
Nelson, N.		167 50	
Niddery, R. J.		215 00	
O'Connell, J.		380 00	
Oliver, J .A. ..... Disbursements..		266 42	
Carried forward		82,253 72	167,346 53

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		82,253 72	167,346 53
FIRE RANGING.—*Continued.*			
Olton, Wm. P.		357 50	
Packnool, C. E.		347 50	
Parkhouse, H.		355 00	
Peacock, Wm.		347 50	
Pigott, H.		347 50	
Pigott, J. A.		347 50	
Pingle, A.		352 50	
Piper, C.		340 00	
Platt, S. P.		200 00	
Pollock, R.		347 50	
Porter, C. T.		100 00	
Porteous, Wm.		377 50	
Potter, L. I.		347 50	
Pritchard, F.		514 50	
Prophet, E. A.		357 50	
Rabbitts, Max	775 00		
Disbursements	333 27		
		1,108 27	
Ragen, J.		305 00	
Ralston, D.		347 50	
Read, C.		290 00	
Regan, J.		327 50	
Revells, L. O.		784 00	
Reynolds, A.		307 50	
Rhodes, F. M.		142 50	
Robinson, J. B.		305 00	
Rochfort, A.		380 00	
Rowe, James		390 00	
Rusk, O. W. ..... Disbursements		1 94	
Savard, A.		347 50	
Scott, W.	422 50		
Disbursements	173 75		
		596 25	
Scott, T. E.		352 50	
Scott, R.		568 00	
Seymour, R. V.		202 50	
Shoeberg, Alf.		75 00	
Sinclaire, D.		367 50	
Sing, W. H.		138 00	
Skidmore, G. H.		347 50	
Small, M. A.		372 50	
Smith, V.		514 50	
Smith, E. J.		307 50	
Smith, L.		330 00	
Spillett, John		202 50	
Spofford, T.		356 50	
Staniforth, A.		365 00	
State, Sam		347 50	
Stewart, J. A.	765 00		
Disbursements	653 75		
		1,418 75	
Sudds, D.		374 00	
Superior Construction Co.		982 93	
Swanson, G.		376 75	
Sweeney, L.		125 00	
Tang, John		382 50	
Thomson, W. B.		195 00	
Carried forward		101,628 11	167,346 53

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		101,628 11	167,346 53
FIRE RANGING.—*Concluded.*			
Toomer, S.		347 50	
Tough, J. P.		372 50	
Tripp, E. C.		370 00	
Urlin, W .R.		232 50	
Urquhart, A.		536 00	
Walker, Geo.		375 00	
Watson, V. C.		352 50	
Watts, Geo. ....Disbursements		142 09	
Warren, A. H.		352 50	
Weir, G. A.		347 50	
Welch, James		377 50	
West, W. H.		302 50	
Western, C.		432 00	
Whitley, P. L.		225 00	
White, J. H.		990 00	
Wickens, H.		376 75	
Wilkins, G. N.		568 00	
Wilson, J. G.		345 00	
Williams, R. A.		25 00	
Windle, James		920 00	
Wood, Seth		382 50	
Woodcock, Geo.		327 50	
Wright, H. H.		352 50	
Youmans, A.		360 25	
Young, S.		77 50	
			111,118 20
FOREST RESERVES.			
Temagami Reserve, $37,789.21.			
Allen, Geo.		322 50	
Armstrong, G. N.		292 50	
Aubee, T.		345 00	
Avern, F. B.		352 50	
Barrett, T.		666 00	
Black, G.		345 60	
Blanchette, H.		355 00	
Bond, A. E.		150 00	
Brown, C. C.		335 00	
Brown, J. R.		362 50	
Buisson, Wm.		362 50	
Burns, J. L.		345 00	
Burns, M. P.		305 00	
Carleton, Geo.		347 50	
Cavanagh, S.		347 50	
Champagne, I.		355 00	
Cooper, A. W.		347 50	
Crawford, J.		282 50	
D'Embremont, F.		255 00	
Desrosiers, J.		355 00	
Desrosiers, E.		300 00	
Didier, H.	765 00		
Disbursements	222 53		
		987 53	
Doyle, T. J.		230 00	
Edgar, J.		300 00	
Emond, A.		332 50	
Faeris, R.		1,059 00	
Flanagan, J.		325 00	
Carried forward		10,362 53	278,464 73

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		10,362 53	278,464 73
FOREST RESERVES.—*Continued.*			
Temagami Reserve.—Continued.			
Flannigan, Wm.		300 00	
Friday, J.		50 00	
Gale, W. J.		355 00	
Galt, James		312 50	
Green, V. C.		320 00	
Grenier, J.		317 50	
Grindrod, S.		352 50	
Hamilton, J. E.		332 50	
Harrison, J. W.		915 00	
Hartley, M.		312 50	
Hartt, J. C.		175 00	
Hartt, I. B.		357 50	
Hawley, D. J.		347 50	
Henderson, C. ....Disbursements		8 40	
Hindson, C. E.	1,300 00		
Disbursements	718 08		
		2,018 08	
Hunt, T.		300 00	
Hunter, B. J.		315 09	
Jacob, S. B.		37 50	
Jennings, J. E.		350 00	
Johnston, W.		357 50	
Kennedy, Wm.		387 50	
Lamarche, A.		915 00	
Lewis, S. T.		255 00	
Little, R. R.		337 50	
Mathers, F. W.		320 00	
Miller, J. R.		347 50	
Minor, E.		345 00	
Moffatt, A.		157 50	
Moore, C. A.		352 50	
Morrison, D. R.		355 00	
Morin, J.		332 50	
Morphy, C.		347 50	
McCosh, J. T.		335 00	
McGarvey, P.		325 00	
McLeish, W. J.		345 00	
McLean, R. S.		200 00	
McKechnie, A.		347 50	
McMullin, Wm.		357 50	
McNeil, E. R.		330 00	
McNiven, A.		310 00	
McNulty, T.		167 50	
Nadon, P.		355 09	
Neil, H. J.		342 50	
Nelson, P.		145 00	
Pacquette, A.		355 00	
Parent, J.		355 00	
Parker, J. J.		230 00	
Patterson, B.		357 50	
Petrant, Wm.		360 00	
Pirie, J. B.		322 50	
Powell, J.		357 50	
Poulin, Wm.		362 50	
Prendergast, R. H.		362 50	
Reesor, G. O.		347 50	
Carried forward		29,619 01	278,464 73

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		29,619 01	278,464 73
FOREST RESERVES.—*Continued.*			
Temagami Reserve.—Concluded.			
Sage, P.		345 00	
Sauve, J.		317 50	
Scully, James		322 50	
Simpson, T.		347 50	
Smith, E. J.		345 00	
Stewart, E. B.		182 50	
Street, H. W.		307 50	
Thorpe, Thos.		365 00	
Throthier, J.		347 50	
Tremblay, J.		355 00	
Vivaris, D.		915 00	
Wallace, A.		347 50	
White, J.		267 50	
White, W. J.		335 00	
White, Jos. W.		357 50	
Whitmore, Rouse		237 50	
Wilson, B.		360 00	
Wilson, A.		345 00	
Wilding, C. H.		115 00	
Winder, A.		347 50	
Young, R. J.	850 00		
Disbursements	457 70		
		1,307 70	
Metagami Reserve.—$7,936.76.			
Allan, Geo.		390 00	
Baker, Wm.		390 00	
Benn, H. F.		320 00	
Bingham, A. P.		277 50	
Blackwell, J. J.		352 50	
Burden, J.	915 00		
Disbursements	419 26		
		1,334 26	
Butler, W. J.		330 00	
Cameron, W. J.		347 50	
Cayen, J. B.		355 00	
Chubb, G. W.		350 00	
Dougherty, A. E.		355 00	
Freele, L. W. M.		352 50	
Harvey, C. B. S.		347 50	
Hendy, F.		327 50	
Hunter, H. J.		347 50	
Lawrence, C. F.		172 50	
McFayden, Jas.		425 00	
Papineau, Joe.		17 50	
Poulin, D.		352 50	
Schrubsole, E. W.		237 50	
Vine, Robt.		237 50	
Williams, S.		317 50	
Mississaga Reserve.—$18,722.89.			
Acheson, D.		576 00	
Bebee, M. C. G.		325 00	
Bellanger, T.		337 50	
Best, H.		335 00	
Bishop, Frank		170 00	
Burch, Wm.		357 50	
Carried forward		47,826 97	278,464 73

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		47,826 97	278,464 73
FOREST RESERVES.—*Continued.*			
Mississaga Reserve.—Concluded.			
Cade, Geo.		385 00	
Carpenter, R. J.		385 00	
Charlebois, P.		280 00	
Cornett, W. G.		327 50	
Dougherty, A. E.		624 00	
Draper, Wm.		355 00	
Duck, W. S.		390 00	
Duval, C. A.	920 00		
Disbursements	914 89		
		1,834 89	
Dyson, I.		182 50	
Ecker, C. M.		385 00	
Eveline, S.		335 00	
Forman, H. R.		262 50	
Franklin, L.		387 50	
Galt, James		207 50	
Gidley, H. C.		165 00	
Godson, H.		380 00	
Gray, John		125 00	
Greenaway, A. M.		215 00	
Heenan, P.		335 00	
Hillman, John		375 00	
Hoban, James		307 50	
Hussy, Leo.		212 50	
Jean, A.		267 50	
Lacourse, H.		235 00	
Mann, D.		207 50	
Martin, Ed.		260 00	
Martin, H.		192 50	
Mathews, E. H.		340 00	
Mills, W. E.		335 00	
Miller, W. J.		451 00	
Morrison, A.		312 50	
McKay, A.		327 50	
McLaughlin, J.		340 00	
McLeod, W.		260 00	
McLeod, D. J.		22 50	
Nicholas, H.		532 00	
Orange, Wm.		265 00	
Penno, M. H.		170 00	
Phelan, R.		330 00	
Poulin, Nap.		382 50	
Sawyer, E. C.		335 00	
Seeley, L. F.		312 50	
Soucie, P.		377 50	
Spaniel, J.		257 50	
Spaniel, Alex.		277 50	
Stubbs, W. J.		335 00	
Turpin, R.		25 00	
Wells, Geo.		340 00	
Wright, T.		382 50	
Young, Walter		192 50	
Nepigon Reserve.—$18,881.24.			
Allen, Wm.		397 50	
Barker, Alice ..... Telephone operator		258 04	
Barton, J.		402 50	
Carried forward		65,506 90	278,464 73

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		65,506 90	278,464 73
FOREST RESERVES.—*Continued.*			
Nepigon Reserve.—Concluded.			
Blair, Thos.		36 00	
Blakely, E.		397 50	
Bliss, L. E.	1,030 00		
Disbursements	3,863 09		
		4,893 09	
Bouchard, J.		455 00	
Bouchard, M.		377 50	
Cooper, J.		142 50	
Desando, M.		397 50	
Deschamp, D.		415 00	
Dumont, O.		397 50	
Eachem, H.		240 00	
Findlayson, E.		417 50	
Fitzback, J.		377 50	
Fitzpatrick, P.		417 50	
Florence, E.		360 00	
Hardy, Frank		397 50	
Harris, D.		140 00	
Herbert, J.		397 50	
Kirkpatrick, E.		377 50	
Lafontaine, P.		105 00	
Lash, A.		397 50	
Leroy, L.		337 50	
Levesque, J.		417 50	
McDougall, N.		372 50	
McGuire, P.		377 50	
McKechnie, John		626 50	
McLellan, J.		112 50	
Micholson, J.		395 00	
Morrow, S.		397 50	
Netemegesic, E.		325 00	
Netemegesic, M.		97 50	
Rae, A.		437 50	
Rudolph, L.		397 50	
Smith, H.		422 61	
Stewart, J.		100 00	
Thompson, Jas.		422 50	
Vincent, Joe		397 50	
Visneau, P.		397 50	
Ward, J.		272 50	
Willan, Wm.		377 50	
Eastern Reserve, $2,804.68.			
Bishop, J.		362 50	
Brown, H.		365 00	
Bushell, D.		365 00	
Gilmour, E.		365 00	
Head, Geo.		362 50	
Holmes, W.		365 00	
Tapping, T.	600 00		
Disbursements	19 68		
		619 68	
Carried forward		86,134 78	278,464 73

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward	.....	86,134 78	278,464 73
FOREST RESERVES.—*Concluded.*			
Sibley Reserve, $832.50.			
Hornick, Geo.	.....	355 00	
Oliver, J. A.	.....	100 00	
Quinn, J. J.	.....	377 50	86,967 28
FORESTRY.			
Bell Telephone Company	43 60		
Express and Cartage	180 15		
		223 75	
Supplies	.....	2,649 65	
Labor	.....	5,881 49	
Sundries	.....	209 30	8,964 19
MINES AND MINING.			
Miller, W. G., Provincial Geologist, services.....	.....	4,550 00	
Knight, C. W., 1st Assistant Geologist, services.	2,250 00		
Disbursements	759 52		
		3,009 52	
Burrows, A. G., 2nd Assistant Geologist, services..	2,150 00		
Disbursements	595 90		
		2,745 90	
Hopkins, P. E., 3rd Assistant Geologist, services..	1,500 00		
Disbursements	913 24		
		2,413 24	
Rogers, W. R., Topographer, services.....	1,850 00		
Disbursements	38 97		
		1,888 97	
Bell, W. J., Cartographer, services	.....	1,466 54	
Mickle, G. R., Mine Assessor, services	4,000 00		
Disbursements	484 85		
		4,484 85	
Godson, T. E., Mining Commissioner, services....	4,300 00		
Morris, W. H., Mining Commissioner's Clerk, services	1,500 00		
Disbursements	1,087 28		
		6,887 28	
Sutherland, T. F., Chief Inspector of Mines, services	2,500 00		
Disbursements	492 20		
		2,992 20	
Collins, E. A., 1st Assistant Inspector of Mines, services	2,300 00		
Disbursements	1,502 26		
		3,802 26	
McMillan, J. G., 2nd Assistant Inspector of Mines, services	.....	2,281 72	
Bartlett, J., 3rd Assistant Inspector of Mines, services	2,300 00		
Disbursements	1,275 58		
		3,575 58	
Stovel, J. H., 4th Assistant Inspector of Mines, services	1,341 67		
Disbursements	605 64		
		1,947 31	
Carried forward		42,045 37	374,396 20

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward		42,045 37	374,396 20
MINES AND MINING.—*Concluded.*			
McArthur, T. A., Inspector of Recorders' Offices, services	700 00		
Disbursements	414 90		
		1,114 90	
Baker, Prof. M. B., services	1,113 46		
Disbursements	425 94		
		1,539 40	
Beno, J. W., services	301 90		
Disbursements	220 62		
		522 52	
Dyer, W. S., services		242 31	
Ellsworth, Dr. H. V., services	288 46		
Disbursements	38 00		
		326 46	
Hutchinson, R. H., services	242 31		
Disbursements	16 10		
		258 41	
Jackson, P. A., services	346 50		
Disbursements	17 70		
		364 20	
Ledoux, Prof. A., services	450 00		
Disbursements	225 53		
		675 53	
Near, A. E., services	600 00		
Disbursements	175 45		
		775 45	
Parsons, A. L., services	274 04		
Disbursements	368 10		
		642 14	
Rothwell, T. E. .....Disbursements...		23 35	
Scott, John, services	700 00		
Disbursements	246 73		
		946 73	
Thompson, Ellis, services	360 58		
Disbursements	464 76		
		825 34	
Todd, E. W., services		439 61	
Wheatley, A. C., services		230 76	
King's Printer		336 97	
Express		4 95	
Telegraphing		94 48	
Sundries		115 13	
			51,524 01
MINING RECORDERS.			
Campbell, C. A., Recorder	900 00		
Glazier, M. B., Clerk	31 15		
Loudon, W. E., Clerk	100 38		
Shanahan, Miss M., Stenographer	483 08		
Disbursements	445 50		
		1,960 11	
Gauthier, G. H., Recorder	1,500 00		
O'Brien, J. D., Clerk	1,026 56		
Loudon, W. E., Clerk	38 07		
Disbursements	836 31		
		3,400 94	
Carried forward		5,361 05	425,920 21

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward	.....	5,361 05	425,920 21
MINING RECORDERS.—*Concluded.*			
Hough, J. A., Recorder	1,200 90		
Browning, A. J., Clerk	333 00		
Ginn, H. G., Clerk	905 73		
Loudon, W. E., Clerk	273 45		
Powers, Miss E. M., Stenographer	95 00		
Disbursements	1,153 85		
		3,961 03	
Miller, N., Recorder	1,000 00		
Disbursements	220 25		
		1,220 25	
Morgan, J. W., Recorder	1,000 00		
Glazier, M. B., Clerk	273 46		
Morgan, M. R., Clerk	258 46		
Disbursements	412 57		
		1,944 49	
Morgan, M. R., Recorder	381 73		
Disbursements	191 65		
		573 38	
McAulay, N. J., Recorder	1,800 00		
Sarsfield, J. M., Clerk	1,200 00		
Louden, W. E., Clerk	152 32		
Munro, Miss E., Stenographer	785 00		
Disbursements	786 80		
		4,724 12	
McQuire, H. F., Recorder	500 00		
Disbursements	150 00		
		650 00	
Sheppard, H. E., Recorder	1,000 00		
Disbursements	184 45		
		1,184 45	
Skill, A., Recorder	1,200 00		
Browning, A. J., Recorder	733 33		
Disbursements	590 11		
		2,523 44	
Spry, W. L., Recorder	750 00		
Disbursements	128 25		
		878 25	
Express	131 05		
King's Printer	808 16		
Methodist Book and Publishing House	21 31		
Telegraphing	19 45		
		979 97	
			24,000 43
PROVINCIAL ASSAY OFFICE.			
Kleiman, Samuel	.....	16 00	
Leat, Arthur	.....	104 00	
McNeill, W. K.	.....	1,800 00	
O'Neill, Mark	.....	182 00	
O'Neill, James	.....	96 00	
Rothwell, T. E.	1,200 00		
Disbursements	120 05		
		1,320 05	
Todd, E. W.	.....	540 00	
Supplies	499 05		
Disbursements	99 48		
		598 53	
			4,656 58
Carried forward	.....	.....	454,577 22

Appendix No. 6.—Continued.

Service.	$ c.	$ c.	$ c.
Brought forward			454,577 22
CULLERS' ACT.			
Duff, A. S. ..... Services..	12 00		
Disbursements	4 00		
		16 00	
McDougall, J T. ..... Disbursements..		13 30	
Oliver, J. A. ..... Disbursements..		7 75	
Watts, Geo. ..... Disbursements..		7 90	
			44 95
EXPENSES NOT OTHERWISE PROVIDED FOR.			
Gamble, W. P., Services *re*: Investigation of effect of Sulphur fumes	60 00		
Howitt, J. E., Disbursements *re*: Investigation of effect of Sulphur fumes	31 45		
Martin, N. R., Services	471 15		
Disbursements	331 90		
re: Investigation of effect of Sulphur fumes		894 50	
Kirkpatrick, J., Services *re*: Toronto Exhibition..	22 00		
McNeill, W. K., Services *re*: Toronto Exhibition.	75 00		
Searls, J. Y., Services *re*: Toronto Exhibition....	46 00		
Shaw, David, Services *re*: Toronto Exhibition...	20 00		
West, W. J., Services *re*: Toronto Exhibition....	42 50		
General Disbursements *re*: Toronto Exhibition...	1,106 75		
		1,312 25	
			2,206 75
SURVEYS			63,884 33
BOARD OF SURVEYORS			200 00
EXPERIMENTAL TREATMENT OF ORE			638 25
INVESTIGATION OF TREE DISEASES			5,211 17
INSURANCE			331 06
ALLOWANCE TO SCHOOL SECTIONS IN TOWNSHIP OF SOUTH WALSINGHAM			150 00
CANADIAN FORESTRY ASSOCIATION, grant			300 00
REFUNDS—Miscellaneous			14,315 32
COLONIZATION AND IMMIGRATION.			
PRINTING, ADVERTISING, ETC.		14,478 89	
BONUSES AND ADVANCES TO AGENTS		40 00	
TRANSPORTATION EXPENSES DISTRIBUTING SETTLERS.		99 00	
LAND GUIDES		619 00	
EMIGRATION WORK IN GREAT BRITAIN		22,112 11	
ALLOWANCE TO RICHARD REID		1,650 15	
RENTAL IMMIGRATION OFFICE		1,582 59	
ADVANCE COST OF FARM LABOURERS' TRANSPORTATION		766 67	
MAINTAINING HOMES		500 00	
WOMEN'S WELCOME HOSTEL		1,400 00	
IMPERIAL TAX		769 66	
			44,018 07
Carried forward			585,877 12

Appendix No. 6.—Concluded.

Service.	$ c.	$ c.	$ c.
Brought forward			585,877 12
CONTINGENCIES.			
Departmental.			
Printing and Binding	3,602 54		
Stationery	4,674,44		
		8,276 98	
Postage	2,246 34		
Express	194 63		
		2,440 97	
Telegraphing	511 83		
Car Fare	60 00		
		571 83	
Subscriptions	269 68		
Advertising	3,477 35		
		3,747 03	
Typewriters and repairs		1,054 90	
Cain, W. C., travelling expenses	25 80		
Ferguson, Hon. G. H., travelling expenses	500 00		
Grigg, A., travelling expenses	20 70		
Hele, C. C., travelling expenses	132 84		
Houser, J., travelling expenses	35 50		
Hutcheon, J., disbursements	768 25		
Keefer, F. H., legal services	20 00		
Niven, F. J., travelling expenses	35 60		
Rorke, L. V., travelling expenses	285 65		
Steel Equipment Company of Canada, Installing Filing System	5,424 03		
		7,248 37	
Extra Clerks	5,146 92		
Sundries	192 47		
		5,339 39	
			28,679 47
BUREAU OF MINES.			
Printing and Binding	1,902 82		
Stationery	1,222 20		
		3,125 02	
Postage	650 98		
Telegraphing	60 07		
Express and Cartage	82 31		
Advertising	991 05		
Subscriptions	250 26		
Maps	3,569 70		
		5,604 37	
Typewriters, repairs, etc.	342 15		
Fisher, R. D., travelling expenses	4 85		
Nichols, F. J., Preparing Index	900 00		
Rogers, W. R., travelling expenses	47 52		
Uglow, W. L., Preparaing Report on Zinc Deposits in Eastern Canada	250 00		
		1,544 52	
Extra Clerks	1,657 34		
Sundries	153 81		
		1,811 15	
			12,085 06
FORESTRY.			
Zavitz, E. J., travelling expenses	312 29		
Newman, F. S., travelling expenses	118 00		
White, J. H., travelling expenses	14 15		
		444 44	
Postage,	138 50		
Supplies	244 18		
Sundries	179 18		
		561 86	
			1,006 30
COLONIZATION.			1,848 20
			629,496 15

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 7.

Statement of Expenses on account of various Services under the direction of the Department of Lands, Forests and Mines for the year ending October 31st, 1916.

Service.	$ c.	$ c.
Algonquin Park	30,010 30	
Algonquin Park, Extinguishing Squatters' Claims	10 00	
Algonquin Park, Cleaning Right-of-Way	5,452 83	
		35,473 13
Quetico Provincial Park		11,268 87
Veterans' Commutation		600 00
Royal Nickel Commission		37,578 14
Legal Investigations		700 00
Dominion Reduction Co., Gold Quartz		9,955 76
Bounty Act, Edward VII., Cap. 14.		
Deloro Mining and Reduction Co.	11,650 02	
Coniagas Reduction Co., Ltd.	11,555 67	
Metals Chemical Co., Ltd.	2,345 22	
		25,550 91
		121,126 71

D. GEO. ROSS,
Accountant.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 8.

PATENTS OFFICE (LANDS BRANCH).

Statement of Patents, etc., issued from 1st November, 1915, to 31st October, 1916.

Public Lands (late Crown)	505
" " (late School)	16
" " (late Clergy Reserves)	7
" " (University)	19
Free Grant Lands (Act of 1913)	395
" " " (Act of 1901) (Veterans)	92
Mining Lands (Patents)	402
Mining " (Leases)	163
Crown Leases	18
Licenses of Occupation	43
Temagami Leases	4
Sand and Gravel Leases	5
Total	1,669

CHARLES S. JONES,
Clerk in Charge.

ALBERT GRIGG,
Deputy Minister.

Appendix

WOODS AND

Statement of Timber and Amounts accrued from Timber Dues, Ground

QUANTITY AND

Agencies.	Area covered by timber license.	Saw logs.				Boom and	
		Pine.		Other.		Pine.	
	Square miles.	Pieces.	Feet B.M.	Pieces.	Feet B.M.	Pieces.	Feet B.M.
Western Timber District	11,377	6,698,293	260,853,223	801,573	27,683,608	92,863	9,486,659
Belleville Timber District	507	144,087	2,556,900	117,067	3,678,027	1,082	133,450
Ottawa Timber District	3,828¼	635,325	32,934,817	249,456	5,329,052	6,051	699,104
	15,712¼	7,477,705	296,344,940	1,168,096	36,690,687	99,996	10,319,213

General Statement

Agencies.	Cordwood.		Tan Bark.	Railway Ties.	Posts.	Poles.	Stave Bolts.	Pulpwood,
	Hard.	Soft.						
	Cords.	Cords.	Cords.	Pieces.	Cords.	Pieces.	Cords.	Cords.
Western Timber District	6,721	30,623½	4,594	734,798	3,465	1,608	835	146,895
Belleville Timber District	2,465	.....	526½	506	3	.....	45	2,293
Ottawa Timber District	20	764	1,576	3,293	75	753	.....	20,325
	9,206	31,387½	6,696½	738,597	3,543	2,361	880	169,513

JOHN HOUSER,
Chief Clerk in Charge.

No. 9.

FORESTS.

Rent and Bonus during the year ending 31st October, 1916.

DESCRIPTION OF TIMBER.

Dimension.		Square Timber.		Pine.	Square Timber.		Cedar.	Piling.	Piling.	
Other.		Pine.			Birch.					
Pieces.	Feet B.M.	Pieces	Cubic feet.	Lineal feet.	Pieces	Cubic feet.	Lineal feet.	Lineal feet.	Pieces	Feet B.M
9,367	1,303,597	1,816	96,851	298,611	142	4,271	1,250	72,282	1,500	135,864
1,473	221,296	.....	.....	.....	.....	.....	.....	11,860	.....	.....
3,601	472,386	.....	.....	.....	.....	.....	.....	.....	302	31,118
14,441	1,997,279	1,816	96,851	298,611	142	4,271	1,250	84,142	1,802	166,982

of Timber.—Concluded.

Amounts accrued.

Transfer bonus.	Interest.	Trespass.	Timber dues.	Bonus.	Deposits timber sales	Ground rent.	Total.
$ c	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
3,585 00	11,099 13	15,919 65	678,119 44	448,759 78	81,855 00	63,880 00	1,303,218 00
.....	446 69	2,697 61	8,263 39	749 92	.....	3,500 00	15,657 61
55 00	2,924 04	953 64	60,779 28	.....	.....	21,837 49	86,549 45
3,640 00	14,469 86	19,570 90	747,162 11	449,509 70	81,855 00	89,217 49	1,405,425 06

ALBERT GRIGG,
Deputy Minister.

Appendix No. 10.

WOODS AND FORESTS BRANCH.

Statement of revenue collected during the year ending October 31st, 1916.

	$ c.
Amount of Western collections at Department	1,232,405 95
do Belleville collections "	21,844 72
do Ottawa collections "	81,070 11
	$1,335,320 78

WOODS AND FORESTS BRANCH REVENUE.

October 31st, 1916.

WESTERN DISTRICT—		
Timber dues	$734,436 73	
Bonus	337,550 09	
Ground Rent	63,880 00	
Interest on dues	10,955 94	
Interest on Ground Rent	143 19	
Transfer fees	3,585 00	
Timber Sale Deposits	81,855 00	
		$1,232,405 95
OTTAWA DISTRICT—		
Timber dues	56,253 58	
Ground Rent	21,837 49	
Interest on dues	2,785 21	
Interest on Ground Rent	138 83	
Transfer fees	55 00	
		81,070 11
BELLEVILLE DISTRICT—		
Timber dues	17,475 18	
Bonus	422 85	
Ground Rent	3,500 00	
Interest on dues	426 17	
Interest on Ground Rent	20 52	
		21,844 72
		$1,335,320 78

WOODS AND FORESTS.

Bonus	$419,827 94
Timber dues	822,332 81
Ground Rent	89,520 03
Transfer fees	3,640 00
	$1,335,320 78

JOHN HOUSER,
Chief Clerk in Charge.

ALBERT GRIGG
Deputy Minister.

Appendix No. 11.

Statement of work done in the Military office, Lands branch of the Department of Lands, Forests and Mines, during the year ending October 31st, 1916.

References for Veteran Patents issued	132
Locations under military certificates	76
Certificates applied in payment of lands	18
Certificates surrendered for commutation money	12
Letters received	3,550
Letters written	3,200
Special letters to agents	740
Special letters to mining recorders	190
Maps and reports supplied to veterans	1,050
Printed forms sent out	300
Copies of Veteran Act supplied	60

H. E. JOHNSTON,
Clerk in Charge.

ALBERT GRIGG,
Deputy Minister.

Appendix No. 12.

LIST OF CULLERS.

Anderson, M. M.....Almonte.
Allan, James D.....Bracebridge.
Appleton, Erwin B.....Bracebridge.
Albert, Andrew.....Ottawa.
Adams, J. Q.....Longford Mills.
Anderson, Patrick J.....Campbellford.
Anderson, J C.....Gravenhurst.
Allan, Alfred.....Ottawa.
Allen, R. A.....Bannockburn.
Aikens, Geo. M.....French River.
Appleby, Ridley.....Katrine.
Adams, James M.....Sault Ste. Marie.
Aylward, James.....Peterborough.
Archibald, John L.....Keewatin.
Austin, Wm. G.....Renfrew.
Anderson, Charles.....Little Current.
Anderson, John.....Cartier.
Adair, Thomas Albert....Gananoque.
Anderson, J. G.....Alpena, Mich.
Alexander, Samuel.....Arden.
Adams, Wm.....Westmeath.
Arkle, George.....Kenora.
Armstrong, Jas. Theodore.McKellar.
Armstrong, Thomas J.....Arnprior.
Acheson, Ira M.....Westmeath.
Albert, Alfred E.....Ottawa.
Alma, John E.....Hawkesbury.
Adams, George A.....Longford.
Ansley, John Albert.....Thessalon.
Ansley, John Jenkins.....Thessalon.
Ainslie, Alexander.....Spanish.
Apleton, E. A.....Kenora.
Arnill, William.....Iron Bridge.
Adams, Fred.....L'Orignal.
Alexander, R. Harvey.....Spragge.
Alexander, J. Albert.....Spragge.
Ainslie, Donald McF.....Whitestone.
Ansley, William.....Thessalon.
Argue, W. A.....Kearney.
Almers, John.....Kenora.
Allard, Telesphore Jos.....W. Fort William.
Andrews, Geo. E.....Massey.
Brophy, Michael Patrick..Massey Station.
Boland, Abraham.....Cartier.
Brown, Singleton.....Bracebridge.
Barry, Thomas James.....Hastings.
Blanchet, Paul Fred'k....Ottawa.
Bird, W. S.....Parry Sound.
Bayley, James T.....Gravenhurst.
Bell, Henry.....Ottawa.
Beach, Herbert Mahlon...Ottawa.
Barry, Thomas.....Millbridge.
Beatty, W. R.....Parry Sound.
Brooks, Frederick Wm.....Mackay's Station.
Brown, Robt. D.....Port Sidney.
Breed, Arthur G.....Penetanguishene.
Barnes, Thomas Geo. Lee.Muskoka Mills.
Buchanan, Robert.....Coldwater.
Beck, Jacob Frederick....Penetanguishene.
Bird, Joseph Manly.....Muskoka Mills.
Boyd, John F.....Thessalon.
Brandon, Martin W.....Peterborough.
Bell, John C.....Peterborough.
Bartlett, George W..... Warren.

Brown, Silas.....Klock's Mills.
Boland, W. G.....Eganville.
Baulke, George R.....Aylmer, Que.
Bouchey, Arthur.....Massey.
Buchanan, Mark.....Trout Mills.
Barrett, W. J.....Thessalon.
Bromley, Thomas.....Pembroke.
Bremner, John L.....Adamston.
Breen, Bernard.....Garden River.
Buie, Dougal.....Providence Bay.
Baker, Thomas.....Blind River.
Blais, Felix.....Hull, Que.
Balsdon, George.....Keewatin.
Bromley, W. H.....Pembroke.
Bowers, Isaac.....Little Current.
Brown, Thomas.....Barrie.
Bass, Walter R.....W. Huntingdon.
Bates, Robert.....Kenora.
Binnie, Thomas.....Port Arthur.
Blair, William.....Keewatin.
Bick, Thomas.....Bobcaygeon.
Burke, John Thomas.....Midland.
Buchan, Sterling.....L'Orignal.
Brown, Joseph A.....Spanish.
Baird, P. C.....Rainy River.
Brill, J. W.....Mine Centre.
Beattie, Arthur W.....Arnprior.
Brock, H. S.....Ottawa.
Benson, John Bird.....Midland.
Brennan, Rich'd LawrencePeterborough.
Brown, Hugh Riside.....Huntsville.
Bryan, Frank.....Keewatin.
Bennett, Edward Clinton..Ahmic Harbour.
Blaine, Harvie Thomas...Orillia.
Barrett, Thomas.....Barrie.
Bickell, James Manuel....Sault Ste. Marie.
Buisson, William.....Sudbury.
Borrett, James A.....Sault Ste. Marie.
Bliss, C. Lidden.....Sudbury.
Bray, James.....Kinmount.
Bremner, George.....Arnprior.
Bromley, Samuel.....Pembroke.
Brown, A. C.....Fitzroy Harbour.
Berlinquet, Julius.....Opimicon, Que.
Blastorah, Fred L.....Harwood.
Burns, Clifton H.....Little Current.
Beaumont, Ernest.....Parry Sound.
Beattie, Alex.....Whitney.
Brennan, Reginald.....Gravenhurst.
Boyd, George.....Gravenhurst.
Bissell, Geo. Thomas.....Trenton.
Baxter, Richard.....Deseronto.
Breeaugh, Edward.....Deseronto.
Boyd, Geo. A.....Thessalon.
Buchan, Frederick.....Arnprior.
Bradbury, Kerwood.....Blind River.
Belanger, John B.....Mattawa.
Bird, J. F.....Bracebridge.
Beddome, W. E.....Dryden.
Barrett, Patrick.....Arnprior.
Brundage, Alfred W.....Pembroke.
Brougham, Thomas.....Eganville.
Blair, Robert L.....Arnprior.
Benson, John W.....Sturgeon Bay.

Appendix No. 12.—Continued.

LIST OF CULLERS.—Continued.

Beck, Chas. M., Jr.....Penetanguishene.
Beatty, W. J.....Coldwater.
Burns, C. W., Jr.....South River.
Bell, John Henry.....Burk's Falls.
Berry, Harold.....Labelle, Q.
Black, George.....Barwick.
Bettes, John Hiram.....Muskoka Mills.
Brady, John.....Renfrew.
Brown, James.....Buckingham, Q.
Brooks, W. J.....Blind River.
Bertrand, Allan.....Nairn Centre.
Brinkman, Alex. B.....Sault Ste. Marie.
Black, Jacob.....Barwick.
Beattie, W. J.....Arnprior.
Bromley, William.....Westmeath.
Bissell, Hartie.....Trenton.
Brown, Robert.....Starrat.
Beaton, Hugh.....Waubaushene.
Bailey, Arthur.....Parry Sound.
Burd, James Henry.....Parry Sound.
Bailey, Samuel James....Orillia.
Burton, Tinswood.....Renfrew.
Boyes, James.....Huntsville.
Brown, John.....Rockdale.
Brennan, Edward Scott...Sundridge.
Bell, John Arguey.....Klock's Mills.
Bromley Edw. H.....Pembroke.
Bliss, Lawrence E.....Byng Inlet.
Buee, Neil.....Spanish Station.
Brazziel, Leonard.....Spanish Station.
Bowie, James.....Bryson, Que.
Barrie, Nicholas J.....Ottawa.
Burke, J. D.....Kenora.
Bowen, Thomas.....Deseronto.
Brown, James F.....Baysville.
Blastorah, Bernard.....Harwood.
Brannan, William H.....Pembroke.
Bromley, Thomas.....Webbwood.
Barr, J. C.....Fort Frances.
Bradley, J. M.....Mine Centre.
Burns, Dominick.....Webbwood.
Blaikie, Campbell D.....Fort Frances.
Bury, Henry J.....Stratton.
Brown, R. A.....Cartier.
Brouse, Silas.....Webbwood.
Byrne, James.....Kenora.
Buchan, A.....Ft. William.
Bailey, Alex.....Thor Lake.
Bennett, Oscar T.....Little Current.
Campbell, Robert John....Flinton.
Carpenter, John A.....Arnprior.
Campbell, Alex. J.....Trenton.
Carson, James.....Bracebridge.
Campbell, J. M.....Bracebridge.
Campbell, Robert.....Bracebridge.
Clairmont, Joseph.....Campbellford.
Clarkson, Robert J.....Parry Sound.
Carruthers, Aaron.....Hintonburg.
Calder, Wm. J.....Bark Lake.
Chew, Joseph.....Gravenhurst.
Cole, James Colin.....Ottawa.
Cameron, Wm.....Collin's Inlet.
Cain, Robert.....Midland.
Crawford, Stephen W.....Thessalon.
Cochrane, George.....Peterboro.
Coburn, John.....Lindsay.
Crewe, Nathaniel.....Bobcaygeon.
Cameron, Alexander.....Norman.
Chrysler, Frank R. L.....Webbwood.
Callaghan, Thomas, Jr....Campbellford.
Carson, Hugh.....Kenora.
Calder, George.....Woodville.
Callaghan, Dennis.....Campbellford.
Corrigan, Robt. T.....Emo.
Cameron, John H.....Kenora.
Carson, Melvin.....Little Current.
Cameron, John K.....Spanish River.
Cassidy, William.....Little Current.
Coons, Geo. Washington .Peterboro.
Chisholm, Geo. Leopold...Sault Ste. Marie.
Clark, Wm. J.....Birkendale.
Carr, Herbert E.....North Bay.
Cochrane, Alfred L.....Muldoon, Que.
Campbell, George.....Fort Frances.
Chalmers, George James..Peterboro.
Caverly, David Charles....Parry Sound.
Campbell, Archibald J.....Little Current.
Close, John L.....Arnprior.
Carmichael, Donald.....Arnprior.
Carty, John.....Arnprior.
Cleary, Patrick M.....Arnprior.
Caldwell, James M.....Callender.
Cushing, John J.....Davidson, Que.
Crebo, William.....Thessalon.
Cullen, Michael J.....Massey Station.
Cuthbertson, William.....Arnprior.
Carss, Percy.....Thessalon.
Coghlan, Michael.....Chapeau, Que.
Cameron, Alexr. Gordon..Beauchene, Q.
Cassaday, W. W.....Emo.
Carter, Robert E.....Fesserton.
Coleman, Jos.....Baysville.
Cardiff, Geo. McDougall...Sudbury.
Cameron, W. D.....Kenora.
Crandal, F.....Port Arthur.
Campbell, James R.....Eganville.
Campbell, John A.....Galleta.
Caillier, Hyacinth.....Arnprior.
Chamberlain, Thomas.....Bobcaygeon.
Cooper, David Allan.....Millbrook.
Cox, Henry.....Ballerica, Que.
Currie, James.....Ottawa.
Clarkson, A. E.....Midland.
Clairmont, E.....Gravenhurst.
Cameron, W. F.....Sturgeon Bay.
Connolly, David.....Gravenhurst.
Campbell, P. C.....Sault Ste. Marie.
Cadenhead, Alexander.....Midland.
Carpenter, R. J.....Arnprior.
Christie, William Pringle.Severn Bridge.
Campbell, C. V.....Sault Ste. Marie.
Clegg, Samuel.....Peterboro.
Clairmont, William L.....Gravenhurst.
Cook, Sydney P. W.....Spanish Station.
Corrigan, John.....Baysville.
Chalmers, Alexander M....Peterboro.
Charlton, George A .....Collingwood.
Cahill, Thomas .....Nosbonsing.

Appendix No. 12.—Continued.

LIST OF CULLERS.—Continued.

Chew, Manley .....Midland.
Cooper, James Eddly.....Saurin.
Cook, Reinhardt.....South River.
Crowe, Cecil .....Bobcaygeon.
Callaghan, Denis.....Trenton.
Collins, James.....Barryville.
Claffey, Edward D.....Fort William.
Coyne, Phin.....Chelmsford.
Constantine, Eudore .....Blind River.
Cameron, Ewan.....Gordon Lake.
Campbell, Daniel N.....Buck'gham, Que.
Canniff, R W.....Kenora.
Cassidy, S. C.....Dunchurch.
Charleston, John Baptiste.Ottawa.
Comer, Billa F.....Tweed.
Carter, George .....Sundridge.
Corrigan, Robt. J.....Emo.
Caswell, Grant.....Coldwater.
Caswell, Geo.....Coldwater.
Chemir, David A.....Pembroke.
Clairmont, Philadelp L....Gravenhurst.
Crowe, Edgerton.....Bobcaygeon.
Castonquay, A. C.....Chelmsford.
Clark, Donald Allan.....Port Arthur.
Charette, Herbert.....Devlin.
Christie, Uriah W. .....Fort Frances.
Clark, Joseph C.....Fort Frances.
Crowe, Leslie.....Bobcaygeon.
Campbell, Duncan W.....Stewartville.
Callahan, Thomas N.....Arnprior.
Clements, Albert James...Bent River.
Carney, Albert .....Sault Ste. Marie.
Collins, Arthur.....Massey Station.
Carter, George.....Lavelle, Que.
Chitty, Alfred E.....Kenora.
Cardiff, Richard J.....Arnprior.
Conway, Thomas.....Barry's Bay.
Costello, Thomas M.....Antrim.
Cross, R. J.....Silver Islet.
Clark, R. H.....Port Arthur.
Clark, Wm. R.....Port Arthur.
Coombs, A. B.....Bracebridge.
Cameron, A. F.....Emo.
Campbell, J. S.....Fort Frances.
Clearihue, Geo. A.....784 Hubert St., Montreal, Que.
Cuddihey, J. T.....Pembroke.
Cameron, Ronald.....Ignace.
Cole, J. E.....Kenora.
Currie, J. E.....Kenora.
Clempson, A. J.....Dryden.
Didier, Hector .....Mattawa.
Doran, Frank.....Barryvale.
Dunning, E. Percival.....Parry Sound.
Duff, R. J.....Arnprior.
Durrill, John W.....Ottawa.
Dickson, John.....Sundridge.
Dickson, James L.....Michipic'ten Hr.
Dobie, Harry.....Sault Ste. Marie.
Deacon, Charles.....Sault Ste. Marie.
Danter, R. W.....Parry Sound.
Doyle, T. J. .....Eau Claire.
Dobie, Alexander R.....Blind River.
Darling, J. M.....Byng Inlet.
Dillon, John.....Calabogie.
Durrell, Jos. Nelson.....P'rt'ge du Ft., Q.
Durrell, John.....Callender.
Donally, Richard S.....Sudbury.
Devine, William .....Cook's Mills.
Durrill, William.....Nosbonsing.
Draper, Patrick.....Quyon, Que.
Davis, J. P.....Bobcaygeon.
Dale, John Alexander....Birkendale.
Dinsmore, Chas. L.....Huntsville.
Drum, Patrick.....Belleville.
Durham, Edgar S.....Rosseau.
Duquette, Chas.....Webbwood.
Davis, William Albert.....Bobcaygeon.
Dickson, Robert AlexanderKeene.
Dawkins, John.....Gravenhurst.
Doxsee, James E.....Gravenhurst.
Didier, L. P.....Aylmer, Que.
Devine, Patrick J.....Sheenboro, Que.
Dinsmore, Richard.....Huntsville.
Dunn, Percy E.....Longford Mills.
Duval, Chas.....Halfway.
Donlevy, James.....Calabogie.
Doris, Patrick.....Peterborough.
Doris, John.....Peterborough.
Donahue, Michael.....Erinsville.
Doran, W.....Belleville.
Dickson, Robert R.....Kippewa, Que.
Donlevy, Wm. C.....Rockcliffe.
Duff, Chas. A.....Stewartville.
Dean, James C.....Kenora.
Duff, Peter A.....Claybank.
Duncan, Downey.....Rainy River.
Dougherty, J. M.....Fort Frances.
Dunn, John F.....Spanish Mills.
Dyke, Morris F.... .....Blind River.
Devitt, Frank.....Dinorwic.
Dickie, David..... ..Port Arthur.
Dupuis, Alfred.....Keewatin.
Devlin, Samuel.....Spanish Mills.
Dougherty, W. H.....McLaren's Bay.
Duffy, William A.....Callender.
Duncan, Edward J.....Sturgeon Falls.
Dennie, Frank.....Capreol.
Enlaw, Oliver.....Campbellford.
Ebert, Andrew P.....Pembroke.
Ellis, Alexander.....Arnprior.
Ellis, John .....Westmeath.
Errington, Joseph.....Sundridge.
Eddington, Henry John....Parry Sound.
Enright, Daniel.....Port Arthur.
Eager, James.....Parry Sound.
Elliott, Porter P.....Mine Centre.
Elliott, William.....Cache Bay.
Edgar, J. E.....Kenora.
Elliott, George E.....Peterborough.
Edwards, Joseph K.....Gillies Depot.
Eldridge, Robert.....Fort Frances.
Fraser, John A .....Kenora.
Ferguson, Wm. H.....Red Bay.
Forbes, Chris. McKay....McLean's Depot.
Fitzgerald, E. Clair.....Parry Sound.
Farrell, W H.....Ironside, Que.
French, Lewis William...Wisawasa.

Appendix No. 13.—Continued.

LIST OF CULLERS.—Continued.

Fraser, William A.....Mattawa.
Finerty, Patrick.....Rochfort.
Farnand, Frank.....Diamond.
Fulton, Philip S.....Spanish Station
Fitzgerald, Ullyot C.....Parry Sound.
Fenn, George.....Bracebridge.
Fortune, Owen.....Trenton.
Fraser, David.....Norman.
France, John.....Collin's Inlet.
Ferguson, Ernest A.....Baysville.
Ferguson, Alpen.....Mattawa.
Ford, John William B....P'r'tage du Ft., Q.
Ford, Charles.....Wahnapitae.
Findlay, J. H.....Braeside.
Fraser, James.....Renfrew.
Fairen, Francis.....Peterborough.
Faulkner, Jos.....Fesserton.
Fraser, Alexander, Jr.....Westmeath.
Fairbairn, William.....Calabogie.
Fraser, William A.....Pembroke.
Fraser, Foster.....Pembroke.
Fraser, Wm.....Little Current.
Fraser, Hugh Alexander..Pembroke.
Flaherty, John.....Lindsay.
Fisher, Wm.....Trenton.
Fox, Thomas.....Deseronto.
Fallis, James W.....Sturgeon Bay.
Fairbairn, N. H.....Webbwood.
Friel, John.....Trenton.
Fox, Charles.....Trenton.
Featherstonehaugh, W. H..Penetanguishene.
Friar, Schuyler .....Westmeath.
Farren, Joel.....Savanne.
Fraser, Duncan.....Big Forks.
Freestone, Walter.....Burk's Falls.
Fraser, John.....Bancroft.
Fitzgerald, D. C.....Spanish Station.
Foster, Wm. C.....Searchmont.
Frazer, Jas. C.....Spanish Mills.
Fremlin, H. P.....Richards' Land'g.
Foster, Ed. G.....Sault Ste. Marie.
Farrel, Peter M.....Whitefish.
Fairhall, Edward .....Whiteside.
Fraser, Levi.....Bracebridge.
Fiddes, James.....Rainy River.
Frawley, Frank.....Orillia.
Fisher, George.....Sault Ste. Marie.
Filiatrault, J. A.....Blind River.
Farrier, John William....Chapeau.
Finney, Benjamin B.....Fort Frances.
Follis, Frank C.....Hawkesbury.
Fortune, Percy H.....Blind River.
Fraser, Wm. Foster.....Sault Ste. Marie.
Fraser, Allan H.....Thessalon.
Farquharson, James.....Tomiko.
Fink, John .....Mattawa.
Fletcher, Nicol B.....Parry Sound.
Fraser, Darlington.....Pembroke.
Faulkner, Wm.....Dryden.
Griffith, Geo. F.....Pembroke.
Graham, John.....Arnprior.
Golden, John.....Gilmour.
Gunter, Henry M.....Trenton.
Goltz, Ernest.....Bardsville.
Green, Forman A.....Gilmour.
Green, Samuel E.....Parry Sound.
Grant, John.....Flinton.
Green, Arthur.....Ottawa.
Green, Norman McL.....Bancroft.
Gillis, John J.....Whitefish.
George, R. W.....Parry Sound.
Gardiner, John.....Parry Sound.
Golden, Frank J.....Trenton.
Garson, Robert.....Thessalon.
Gropp, August.....Penetanguishene.
Grozelle, Antoine D.....Muskoka Mills.
Goulais, James.....Peterborough.
Grayson, Charles.....Keewatin.
Gladstone, Harry E.....Cook's Mills.
Guertin, Oliver.....Biscotasing.
Gelinas, Frank.....Hull, Que.
Gwynne, John.....Hawkesbury.
Gray, Frederick M.....Brule Lake.
Graham, Edward G.....Wahnapitae.
Griffin, James.....Spanish River.
Gordon, Alexander B.....Pembroke.
Gareau, Noah J .....Pembroke.
Gillies, D. A.....Carleton Place.
Gilligan, Edward.....Mattawa.
Gladman, Charles .....Parry Sound.
Garrow, John D.....Ottawa.
German, William Burton..Wahnapitae.
Gordon, Robert W.....Pembroke.
Guertin, Nelson.....Petawawa.
Gardner, John .....Kenora.
Gunter, Peter M.....Gilmour.
Glennie, William .....Millbridge.
German, Maurice J.....Fenelon Falls.
Gillies, John A.....Braeside
Goddin, Edward .....Griffith.
Grant, Joseph.....Eganville.
Gilmour, James B.....Braeside.
Gorman, Joseph P.....Sault Ste. Marie.
Gordon, Thomas A.....Hall's Bridge.
Gray, Albert H.....Biscotasing.
Gadway, John.....Parry Sound.
Garrow, Edward .....Webbwood.
Golding, William .....Dorset.
Gillies, Harry .....White Lake.
Gordon, Herbert C.....Nelson.
Gillespie, M. H.....Cook's Mills.
Griffin, William .....Huntsville.
Ganton, David.....Trout Creek.
Graham, George L.....Arnprior.
Graham, Frederick S.....Arnprior.
Gill, Cuthbert.....Orillia.
Graham, James Robert....Kenora.
Graham, Thomas Jordan..Byng Inlet.
Gaudaur, Antoine Daniel..Orillia.
Gorman, Patrick.....Eganville.
Guy, Charles .....Fort Frances.
Graham, George H.....Gillies Depot.
Greer, George P.....Port Arthur.
Gill, Charles.....Fort Frances.
Gamey, William H.....Englehart.
Gorman, Michael J.....Diver.
Grier, Roy B .....Kenora.
Greer, Samuel H.....Gore Bay.

Appendix No. 12.—Continued.

LIST OF CULLERS.—Continued.

Gilbert, Sidney N.....Rainy River.
Guilbeault, A. T.....Klock's Mills.
Gordon, J. B.....Cache Bay.
Gorman, Bert.....Kenney Siding.
Hale, Thomas.....Pembroke.
Hogan, Albert J.....Sault Ste. Marie.
Hagen, Edmund G.....Little Rapids.
Hagen, Wilson.....Thessalon.
Hurd, Cyrus.....Parry Sound.
Henderson, Albert E.....Burford.
Hale, John B.....Sault Ste. Marie.
Hickerson, Melvin T.....Fort Frances.
Howey, George H.....Fort Frances.
Hartt, James.....Gilmour.
Hayes, James.....Enterprise.
Humphrey, T. W.....Gravenhurst.
Huckson, A. H.....French River.
Handley, Robert.....Douglas.
Howe, Alexander.....Queensborough.
Hurd, Edwin.....Hurdville.
Huff, J. S. Morris.....Arnprior.
Halliday, Robert J.....Lindsay.
Hutton, John.....Hutton House.
Hutchinson, Wm. E.....Huntsville.
Hogarth, Joseph Rowan...Pembroke.
Humphrey, John.....Gravenhurst.
Hill, Joshua.....Midland.
Hall, David.....Lovering
Hartley, Charles.....Peterborough.
Hawkins, Henry Chas....Blind River.
Hines, Philip Wallace....Huntsville.
Hudson, John Lewis.....Combermere.
Hurdman, William H....Ottawa.
Hughes, John.....North Bay.
Howie, R. G.....New Liskeard.
Helferty, Dennis.....Eganville.
Hamilton, Robert.....Kenora.
Hoppins, Abiram.....Kingston.
Hoppins, Densmore.....Kingston.
Haystead, John.....Parry Sound.
Henderson, John Irwin...Bobycaygeon.
Hartley, William.....Millbridge.
Higgins, John C.....Peterborough.
Harrison, John, Jr.....Pembroke.
Hawkins, E.....La Breton Flats.
Henderson, Charles.....Bracebridge.
Halliday, Frank.....Parry Sound.
Hammond, W.....Orillia.
Hall, Charles Asa.....Penetanguishene.
Hearl, John.....Callender.
Howe, Isaac.....Fort Frances.
Halliday, James.....Springtown.
Hurdman, J. A.....Ottawa.
Hawkins, Stonewall J. ...Meldrum Bay.
Hinchcliffe, William.....Gunter.
Henderson, Arthur.....Baysville.
Hillis, James M.....Sutton West.
Harris, Wm., Jr.....Day Mills.
Hogg, W. J.....North Bay.
Hoxie, E. P.....Katrine.
Hawkins, Walter.....Pembroke
Howard, James.....Eganville.
Howard, William.....Baysville
Hogan, Enos W.....Savanne.

Horne, John T.....Fort William.
Hamilton, Chas. E.....Kenora.
Henderson, Leonard....Baysville.
Hunter, Thos.....Callender.
Hamilton, Robert J.....Ottawa.
Hawkins, William A.....Pembroke.
Herring, Edward C.....Sebright.
Hatch, J. W.....Dryden.
Hoard, Wm. Paris.....Emo.
Hartman, W. R.....Blind River.
Hill, Ernest L.....Hawkesbury.
Hall, Samuel S.....Marmora.
Hasleton, Constantine....Killaloe.
Hamilton, A. J.....Spragge.
Heggart, E. C.....Trout Mills.
Hunt, Ronald E.....Massey.
Hurd, Asahel.....Parry Sound.
Howe, Peter.....Fort Frances.
Hammond, Samuel H....Fort Frances.
Hunt, Alex. D.....Pearl River.
Home, John F.....Keewatin.
Hay, Benjamin.....Port Arthur.
Hogan, John.....Savanne.
Hargis, Thomas.....Port Arthur.
Hartt, I. B.....Orillia.
Harkins, J. J.....Keewatin.
Hammond, Henry.....Dryden.
Irving, Thos. H.....Parry Sound.
Irwin, Eli.....Kenora.
Irving, Edward C.....Kenora.
Johnston, Ralph E.....Port Arthur.
Johns, Frank A.....Toronto.
Jackson, Robert.....Brechin.
Johnson, Finlay.....Bracebridge.
Jones, Albert.....Victoria Harbor.
Johnson, Thomas.....Bobcaygeon.
Johnston, Archibald M...Norman.
Julien, Charles.....Trenton.
Junkin, Henry.....Marmora.
Johns, Frank.....Nipiss'g Junct'n.
Jessup, Edward D.....Cache Bay.
Johnson, Frank N.....Ottawa.
Johnston, John.....Peninsular Lake.
Johnson, S. M.....Arnprior.
Jones, Frederick James...Flinton.
Johnston, William A.....Castleford.
Jervis, Henry.....Wisawasa.
Jones, William.....Fenelon Falls.
James, Martin.....The Flats.
Johnston, James.....Fort Frances.
Johns, Alexander.....Callender.
Jackson, John A.....Barwick.
Johnson, Thomas.....Fort Frances.
Johnston, George N.....North Bay.
Jamieson, John.....Fort Frances.
Jones, Wellard.....Ignace.
Kintree, Stuart.....Little Rapids.
Kerby, John.....Belleville.
Kennedy, Robert.....Marmora.
Kirby, Louis Russell....Ottawa.
Kennedy, Timothy.....Enterprise.
Kirk, Henry.....Trenton.
Knox, Milton.....Ottawa.
Kinsella, Michael Pierce..Trenton.

Appendix No. 12.—Continued.

LIST OF CULLERS.—Continued.

Kitchen, D.....French River.
Kelly, Jeremiah .....Sudbury.
Kelly, Ferdinand .....Mattawa.
Kennedy, T. J.....Arnprior.
Kenning, Henry .....Pembroke.
Kirby, D. F.....Belleville.
Kirkpatrick, David .....Lindsay.
Kean, John F.....Orillia.
Kellett, Fred .....Keewatin.
Kelly, Michael J.....Baysville.
Kirk, William James ....Webbwood.
Kerr, E. G.. ....Thessalon.
King, Napoleon .....Mattawa.
Kean, B. F.....Orillia.
Kemp, Orval Wesley.....Trenton.
Kirk, Charles Barron ....Queensborough.
Kingsland, W. P.....Ottawa.
Kerr, John B.....Arnprior.
Kennedy, Walter .....Arnprior.
Kennedy, John .....Pembroke.
Knox, Wm. M.....Fesserton.
Kingston, Robert .....Wisawasa.
Kearnan, Robert .....Blind River.
Kearney, Michael John...Buckingham, Qu.
Kendrick, John .....Burk's Falls.
Kendrick, John L.....Burk's Falls.
Kennedy, John W.....Ottawa.
Kelly, James F. .....Trout Creek.
Kauffman, Julias .....Blind River.
Kennedy, Sylvester .....Brule Lake.
Kernahan, George A.....Barwick.
Kehoe, Martin .....Huntsville.
Kennedy, Daniel J.....Spanish.
Kay, Arthur.....Norman.
Kennedy, Frederick J....Buckingham, Qu.
Leannoth, Francis .....Arnprior.
Lee, James .....Warren.
Lloyd, Alfred .....Severn Bridge.
Lawrie, Frank A. .....Parry Sound.
Latimer, Jas. .....Frank's Bay.
Lemyre, Middey .....Campbellford.
Lutz, Jacob .....Parry Sound.
Luby, John E. .....Ottawa.
Law, Wm. J. .....Markstay.
Lummis, Daniel .....Glanmire.
Lowe, W. C. .....Port Arthur.
Londry, S. C. .....Sault Ste. Marie.
Lochnan, James .....Ottawa.
Link, Henry W. .....Ottawa.
Ladarotte, John .....Arnprior.
Lochnan, John .....Aylmer, Que.
Lozo, John .....Trenton.
Loughrin, Lawrence.....Pembroke.
Linton, J. H. .....Parry Sound.
Ludgate, James .....Peterborough.
Lee, Robert .....Huntsville.
Langford, Mark .....Baysville.
Letherby, Edwin .....Midland.
Leahy, Francis M. .....Chapeau, Que.
Langford, Henry .....Baysville.
Lessard, Philip .....Kenora.
Lovering, William James.Coldwater.
Lane, Maurice .....Bobcaygeon.
Lenton, George .....Peterborough.

Lowe, Thomas A. .....Renfrew.
Livingston, Robert M. ...Huntsville.
Londry, William E. .....Sault Ste. Marie.
Labelle, James .....Waltham, Que.
Labelle, Eli .....Waltham, Que.
Ladurante, J. D. .....Ottawa.
Ludgate, Theodore .....Peterborough.
Lucas, Frank .....Sault Ste. Marie.
Lunam, Duncan .....Collfield, Que.
Lott, George .....Trenton.
Lawrie, John D. .....Parry Sound.
Lovering, George Francis.Coldwater.
Lucas, R. G. .....Christina.
LeBlanc, Edmund C. ....Chapleau.
Lavigne, John .....Aylmer, Que.
Landell, Charles S. .....Huntsville.
Long, Henry Elisha .....Mattawa.
Lynch, W. H. .....Collingwood.
Laplante, Francis .....Byng Inlet.
Lindsay, James .....Arnprior.
Labelle, Michael .....Arnprior.
Legree, John .....Dacre.
Legree, James L. .....Calabogie.
Leigh, John Chas. .....Gravenhurst.
Lloyd, Edward B. .....King.
Lemyre, Bruno .....Gravenhurst.
Lavelle, Charles H. .....Canoe Lake.
Lyons, James .....Waltham Sta., Q.
Ledwood, Charles .....Ottawa.
Levelle, Emrey .....Waltham Sta., Q.
Little, Theo. .....Kenora.
Lehman, Joseph .....Stratton Station.
Lafare, Mark .....Cache Bay.
Leach, George .....Vermilion Bay.
Lott, Angus M. .....Spanish Mills.
La Belle, Ambrose .....Kenora.
La Breen, Douglas .....Kenora.
Lavelle, Michael J. .....Blind River.
Lyleton, J. E. ..... Parry Sound.
Lalor, William J. .....Aspdin.
Lalonde, Joseph Maxine..Link.
Laderoute, Michael .....Arnprior.
Leroy, Levi H. .....Port Arthur.
Lusigneau, Arthur .....Pembroke.
Link, John .....Link P.O.
Love, B. .....Port Arthur.
Landry, Fred S. .....Sturgeon Falls.
Malloy Mark .....Baysville.
Martin, Hugh .....Sault Ste. Marie.
Miller, R. O. .....Gravenhurst.
Morrison, James .....Toronto.
Murray, Frederick .....Huntsville.
Menzies, Archibald .....Burk's Falls.
Manning, James .....Trenton.
Martin, Philip .....Stoco.
Malone, Wm. Patrick ....Ottawa.
Marsh, Esli Terrill .....Trenton.
Miller, John W. .....Huntsville.
Muchinbacker, Asa .....Rousseau Falls.
Morris, Geo. F. .....French Bay.
Murray, George, Jr. .....Waubaushene.
Maughan, Joseph .....Fort William.
Margach, Wm. J. .....Port Arthur.

Appendix No. 12.—Continued.

LIST OF CULLERS.—Continued.

Murray, George, Sr. .....Waubaushene.
Manice, Wm. .....Peterborough.
Murray, Wm. .....Kenora.
Morgan, Richard J. .....Kenora.
Magee, Thomas Arthur ...Kenora.
Murdoch, James .....Cook's Mills.
Mulvahill, Wm. .....Arnprior.
Murphy, Arthur .....Ottawa.
Mayhew, Jacob .....Northcote.
Molyneaux, George .....Parry Sound.
Milway, Joseph .....Fort William.
Mackie, Nathan .....Port Arthur.
Milne, Archie .....Arnprior.
Murray, James .....Peterborough.
Moore, James A. E. .....Lakefield.
Merkley, William A. .....Ottawa.
Murphy, Hugh R. .....Ottawa East.
Murphy, W. J. .....Arnprior.
Murray, William .....Markstay.
Martin, Edgerton .....Markstay.
Mathieson, Archie .....Fort Frances.
Moore, Henry R. .....Lakefield.
Mickle, Chas. S. .....Gravenhurst.
Mullen, James .....Webbwood.
Morley, A. W. .....Winnipeg.
Macdonald, James M. .....North Bay.
Money, Harry .....Haileybury.
Mather, Allen .....Keewatin.
Menzies, Alexander .....Sault Ste. Marie.
Munro, Peter P. .....Commanda.
Mason, Benjamin .....Westmeath.
Monaghan, John B. .....Arnprior..
Monaghan, M. J. .....Arnprior.
Mulvihill, John .....Arnprior.
Moran, Andrew .....Rockingham, Qu.
Mulvihill, Michael .....Arnprior.
Mann, John .....Manitowaning.
Marrigan, Richard .....Deseronto.
Monaghan, John Dorland..Deseronto.
Matheson, Wm. .....Chelmsford.
Munro, Alex. G. .....Braeside.
Murphy, Oliver A. .....Marksville.
Mellor, Charles .....Port Arthur.
Millions, Harry .....Gillies' Depot.
MacDonell, R. D. .....Biscotasing.
Milne, Fred. .....Trout Mills.
Milne, William H., Jr. ....North Bay.
Murphy, Dennis .....Thessalon.
Mackie, Thomas .....North Lake.
Miller, P. H. .....Blind River.
Munro, Philip .....Braeside.
Mangan, Patrick .....Arnprior.
Marcil, Peter .....Ottawa.
Main, Samuel .....Spanish Station.
Morley, Charles .....Huntsville.
Moore, David Henry .....Peterborough.
Murphy, John .....Arnprior.
Mathieson, Daniel .....Chelmsford.
Milne, Wm. .....Ethel.
Mangan, Charles .....Burk's Falls.
Mooney, Lincoln .....Orillia.
Mangan, John .....Arnprior.
Mooney, Thomas .....Kingston.
Mason, Robt. T. .....Rochesterville.
Moore, Wm. John .....Gravenhurst.

Morrison, Donald .....Reay.
Moore, Wm. .....Bobcaygeon.
Mutchenbacker, Herman ..Rosseau Falls.
Moore, Norman .....Arnprior.
Morley, John R. .....Kenora.
Mackay, J. A. .....Big Forks.
Miller, Robt. .....Montreal.
Mackey, Levi Ralph .....Keewatin.
Morley, Frank W. .....Kenora.
Madden, F. M. .....Haileybury.
Miller, Walter E. .....Owen Sound.
Murray, Robt. .....Berriedale.
Mills, W. J. .....Cache Bay.
Martin, Oscar .....Buckingham, Que.
Margach, Jas. A. .....Kenora.
Murray, Peter .....Emo.
Macdermid, Harry .....Sellwood Jct.
Muckle, John .....Keewatin.
Morel, H., Jr. .....Mattawa.
Molyneaux, Harold .....Parry Sound.
Marchildon, J. P. .....Sturgeon Falls.
Main, G. C. .....Fort Frances.
Marr, H. J. .....Superior Jct.
Mathewson, O. R. .....Blind River.
McCaw, Joseph E. .....Tweed.
McLaren, Peter .....Kenora.
McGregor, Colin F. .....Kenora.
McKenzie, Robt. .....Kenora.
McFadyen, A. J. .....Bracebridge.
McCaulay, Thos. J. .....Goulais Bay.
McDonald, John C. .....Spanish Mills.
McKenzie, Alex E. .....Ansonia.
McIntyre, John .....Arnprior.
McDermott, Thos. .....Orillia.
McDermott, Jas. E. .....North Bay.
McCrindle, Jas. .....Sudbury.
McGhie, Chas. S. .....Whitestone.
McGenigal, John H. .....Whitby.
McCart, Partrick .....Arnprior.
McGrath, Thos. B. .....Peterborough.
McCormick, James J. ....Trenton.
McCarthy, Wm. .....Fenelon Falls.
McAvoy, Owen .....Campbellford.
McConnell, Lewis .....Fesserton.
McMullen, George .....Spragge.
McNab, Angus .....Burnstown.
McColgan, C. H. .....Quyon, Que.
McCallum, Webster .....Arnprior.
McFarlane, Robert L. ....Warren.
McCagherty, Robert E. ..Westmeath
McNab, Archie .....Calabogie.
McDonald, Malcolm .....Spragge.
McIvor, J. A. .....Fort Frances.
McCulloch, M. .....Kenora.
McDonagh, Rod .....Callender.
McManus, James .....Arnprior.
McKinley, J. H. .....Curran.
McPherson, Jas. S. .....Rama.
McKinley, Edward C. ....Toronto.
McClelland John .....Parry Sound.
McFarlane, J. W. .....Cache Bay.
McDonald, Roderick .....Pembroke.
McCormack, Wm. .....Pembroke.
McCreary, William .....Arnprior.
McCuaig, James C. .....Bryson.

Appendix No. 12.—Continued.

LIST OF CULLERS.—Continued.

McColman, Peter .....North Bay.
McLeod, James D. .....Gravenhurst.
McCrimmon, N. K. .....Blind River.
McCreary, James, Jr. ....Arnprior.
McPhee, Hugh .....Byng Inlet.
McCudden James .....Arnprior.
McLachlin, J. A. .....Arnprior.
Macpherson, John .....Ottawa.
McEachren, John A. .....Gravenhurst W
McLeod, Dugald .....Gravenhurst.
McClelland, R. H. .....Parry Sound.
McEvoy, Frank .....Campbellford.
McDermott, Peter .....Orillia.
McIlroy, John .....Madoc.
McNab, Robert J. .....Parry Sound.
McFadden, James .....Ottawa.
McIntosh, James G. .....Carleton Place.
McInnis, Hector D. .....Bracebridge.
McKinnon, Malcolm .....Bracebridge.
McLean, Daniel .....Bracebridge.
McKinnon, Archie J. ....Bracebridge.
McKay, D. C. .....Baysville.
McDonald, James .....Parry Sound.
McPherson, Allan .....Longford.
McDonald, James P. .....French River.
McFarlane, Jos. C. .....Port Severn.
McNabb, Alexander .....Thessalon.
McGillivray, Archibald ..Port Arthur.
McGrane, Edward .....Lindsay.
McLeod, Donald, Jr. .....Keewatin.
McDonald, Hector R. ....Thessalon.
McDougall, Duncan .....Bracebridge.
McNabb, Alexander D. ...Warren.
McCormack, John C. ....Sudbury.
McNamara, John .....Byng Inlet.
McGillivray, Duncan D. ..Algoma Mills.
McIntyre, Daniel A. .....Klock's Mills.
McNamara, Lewis .....Klock's Mill.
McDonald, Sydney C. ....Mattawa.
McGurn, John J. .....Buckingham, Qu.
McKeown, Jno. Joseph...Port Arthur.
McNeel, David .....Sault. Ste. Marie.
McEwan, Andrew .....Thessalon.
McCool, Christopher L. ..Cartier.
McCollom, Donald .....Arnprior.
McDowell, Wm. .....Cache Bay.
McConnachie, Roy StewartHuntsville.
McDonnell, J. K. .....Kenora.
McDonald, Alex. J. .....Vermilion Bay.
McKay, D. A. .....Rainy River.
McMillan, James .....Kenora.
McPhee, Ronald .....Bracebridge.
McKay George Donner ..Dorset.
McWilliams, Maxwell
Theodore .....Peterborough.
McLeod, John .....Keewatin.
McPherson, George .....Keewatin.
McDougall, John D. .....Kenora.
McGregor, Duncan .....Burnstown.
McLean, Peter W. .....Sand Point.
McNichol, John .....Sudbury.
McInnis, D. E. .....Cache Bay.
McLaughlin, Samuel ....Waubaushene.
McCollam, John .....North Bay.
McManus, John C. .....Arnprior.
McLean, John .....Blind River.
McLeod, Norman .....Garden River.
McLean, James ..... Blind River.
McNally, J. A. .....Desbarats.
McNab, Alexander .....Arnprior.
McFarlane, Alexander ....Renfrew.
McFarlane, J. D. .....Stewartsville.
McFarlane, Duncan .....Renfrew.
McKendry, Wm. B. .....Arnprior.
McPhee, Hugh .....Renfrew.
McPhee, John .....Arnprior.
McLachlin, Peter .....Arnprior.
McLachlin, Alexander ...Arnprior.
Mackey, Edward .....Arnprior.
McEwan, Henry .....Trenton.
McDonald, Alfred .....Peterborough.
McGeary, John J. .....Sundridge.
McDonald, Archibald W...Gilmour.
McGaw, John Gillen .....Queensborough.
McCauley, Barney .....Trenton.
McDougall, James T. .....Klock's Mills.
McInenly, Thomas .....Quebec, Que.
McBride, Archibald .....Arnprior.
McFarlane, Robert L. ....Arnprior.
McGowan, Wm. .....Parry Sound.
McLachlin, Norman .....Arnprior.
McDonald, Laughlin ....Pendleton.
McIivor, William J. ....Collin's Inlet.
McKee, John P. .....Sturgeon Falls.
McGowan, Thomas .....Parry Sound.
McDermot, Patrick .....South River.
McKay, Angus .....South River.
McDonald, A. J. .....Longford.
McInnis, Angus D. .....Gravenhurst.
McKendry, Alexander ...Waubaushene.
McGuire, Timothy .....North Bay.
McGrath, John .....Peterborough.
McWilliams, Jno. Bannon.Peterborough.
McCagherty, Patrick .....Westmeath.
McKendry, Daniel .....Arnprior.
MacDonald, D. F. .....Parry Sound.
McManus, Thomas J. ....Renfrew.
Macfarlane, David R. ....Ottawa.
McColgan, Edward .....Quyon, Que.
McKay, John .....Emo.
McKinnon, William .....Kenora.
McKittrick, Frank R. F. .Kenora.
McMichael, Charles .....North Seguin.
McIlroy, Thomas David..Madoc.
McDonald, Wm. Henry ...Trenton.
McGaw, Wm. Thomas ....Callender.
McMillan, L. .....Callender.
McDermott, John L. .....Orillia.
McDonald, Chas. M. .....Pembroke.
McPhee, Benjamin .....Pembroke.
McGee, John Edward ....Parry Sound.
Macfarlane, Mack .....Arnprior.
MacCallum, Alexander ...Braeside.
McRae, Farquhar .....Kenora.
MacCallum, Albert .....Arnprior.
McGonigal, John .....Arnprior.
McConachie, John .....Huntsville.
McKay, D. G. .....Kenora.
McDonald, James .....Peterborough.
McCulloch, John L. .....Lonsdale.

Appendix No. 12.—Continued.

LIST OF CULLERS.—Continued.

McConnell, James .....Mine Centre.
McIntyre, William John ..Port Arthur.
McDonald Allen .....Big Forks.
McLay, Albert.....Devlin.
McQuarrie, Daniel.....Fort Frances.
McNaughton, Daniel.....Bracebridge.
McCagherty, William E...Westmeath.
McDonald, John D.....Mattawa.
McCagherty, Joseph T.....Westmeath.
McAdam, Arch H.....Quyon, Que.
McMurphy, Dugald, Jr....Kenora.
McCall, Alfred.....Kenora.
McRitchie, William.....Kenora.
McRitchie, Malcolm.....Kenora.
McDonald, John Harold...Rydal Bank.
McAuley, William Davis..Sault Ste. Marie.
McCallum, Thomas.....Fort William.
McWhinney, Fred.....Kenora.
McNairney, Hugh H.....Sudbury.
McKelvie, William.....Otter Lake Sta.
McGovern, Frank.....Sault Ste. M.
McCallum, Gordon.....Fort Frances.
McCallum, Henry.....Fort Frances.
McLaughlin, Russell.....Spanish Mills.
McAdam, Miner S.....Quio, Que.
McDougall, David A.....Nesterville.
McLeod, William A.....Manitowaning.
McKee, D. A.....Wylie.
McKay, Norman.....Fort Frances.
McIntosh, Wm.....Biscotasing.
McMahon, Edwin.....Nesto P.O.
McGowan, Thos.....Parry Sound.
McDonald, Norman.....Keewatin.
McLeod, John C.....Port Arthur.
McIntosh, Herbert.....Biscotasing.
McDonald, Thos.....Kenora.
McCool, Daniel.....Sudbury.
Nescott, George.....Kenora.
Newton, Frank.....Gravenhurst.
Newburn, Wm.....Parry Sound.
Niblett, James.....Arnprior.
Nisbett, Robert .....Osceola.
Nevison, Herbert.....Kenora.
Nicholson, John.....Owen Sound.
Newall, John H.....Parry Harbour.
Nolan, John.....Gravenhurst.
Newton, Charles W.....Victoria Harbour.
Nent, Charles.....Vermilion Bay.
Needham, John G.....Pakenham.
Netterfield, David.....John's Island.
Nault, James.....Fort Frances.
Norgate, Chas.....Dryden.
Nash, John.....Kenora.
Nesbitt, Thos.....Kenora.
Oullette, Joseph P.....Cutler.
O'Neil, Thomas.....Bancroft.
O'Neill, Daniel H. H.....Arnprior.
O'Leary, Patrick J.....Orillia.
Oliver, Charles R.....Fesserton.
Overend, George J.....Lonford Mills.
O'Brien, Andrew.....Ottawa.
O'Brien, Frank G.....Arnprior.
Oliver, J. A.....Fort William.
Owen, W. J.....Wabigoon.

O'Connor, John.....Hintonburg.
Oliver, Darcy.....Wahnapitae.
O'Connor, Wm.....Nosbonsing.
O'Neil, James W.....North Bay.
O'Donnell, Wm.....Penetanguishene.
Owens, Richard.....Basin Depot.
O'Reilly, Patrick.....Cartier.
O'Neill, Mark.....Renfrew.
Orrill, John.....Trenton.
O'Neill, Patrick.....Bancroft.
Orde, Francis W.....Kenora.
O'Driscoll, Joseph.....Sault Ste. Marie.
O'Gorman, Peter.....Blind River.
Ogden, L. M.....Fort Frances.
Pigott, John.....Fitzroy Harbour.
Paul, Charles A.....Sault Ste. Marie.
Patinson, Thos.....Bracebridge.
Price, A. E.....Arnprior.
Presley, J. F.....Ashton.
Power, James.....Bobcaygeon.
Patzel, Adolph.....Arnprior.
Plaunt, William B.....Eganville.
Plaunt, Joseph.....Eganville.
Porter, Charles C.....Longford.
Preston, R. E.....Kenora.
Petrie, Geo. A.....Fergus.
Pomeroy, Peter.....Trenton.
Perry, Pringle K.....Byng Inlet, N'th.
Purcall, W. G.....Ottawa.
Purvis, John.....Parry Sound.
Porter, James.....Uphill.
Pearson, John James.....Lindsay.
Penney, Chas. G.....Cache Bay.
Pennock, James P.....Hardwood Lake.
Purdy, John A.....Uxbridge.
Playfair, R. J.....Blind River.
Paterson, John.....Wahnapitae.
Paterson, Alexander.....Orillia.
Parke, James.....Gravenhurst.
Parquette, Oliver.....Webbwood.
Palmateer, Sherman.....Gravenhurst.
Paget, George.....Huntsville.
Pounder, Joseph.....Westmeath.
Pell, Richard D.....Arnprior.
Perry, Frederick.....Port Arthur.
Paget, Charles Edward...Novar.
Porter, Thos. Robt. Mark.Dorset.
Pountney, E. J.....Arnprior.
Pyburn, David J.....Dorset.
Purdy, Geo.....Hintonburg.
Playfair, Andrew Wm.....Sault Ste. Marie.
Pipe, Taylor.....Haileybury.
Pipher, George E.....Mowat.
Pendee, David.....Parry Sound.
Piper, A. J.....Blind River.
Paget, Alfred H.....Ahmic Harbour.
Powers, John J.....Trout Mills.
Pigott, William D.....Fitzroy Harbour.
Potts, Cyril.....North Lake.
Pilkey, William.....La Vallee.
Pointer, Roy R.....Pembroke.
Piper, Roy.....Blind River.
Pehill, Walter.....Dryden.
Palmer, Fred.....Blind River.

Appendix No. 12.—Continued.

LIST OF CULLERS.—Continued.

Quinn, William.....Peterborough.
Quigley, Hugh.....Penetang.
Quirk, Thomas J.....Petawawa.
Quance, Louis F.....Berriedale.
Robertson, D.....Kenora.
Richardson, Fred'k George Trenton.
Richards, Richard .....Tamworth.
Riddell, Geo. Alexander ...Rochesterville.
Robertson, Lewis McLean..Dunchurch.
Robinson, Wm. F. .....Bobcaygeon.
Reamsbottom, Wm. .....Mattawa.
Richey, Evan .....Brentwood.
Randall, Lewis G. .....French River.
Richardson, Chas. Marvyn Trenton.
Rochester, Daniel Baillie..Ottawa.
Riddell, James .....Ottawa.
Rice, Asa S. .....Hull, Que.
Roberts, T. A. .....Huntsville.
Ross, Andrew .....Longford Mills.
Rose, Donald M. .....Kenora.
Rawson, Charles Edward..Coldwater.
Ross, George .....Waubaushene.
Roberts, Percy T. .....Keewatin.
Ritchie, Wm. D. .....Little Current.
Ramsay, Robert .....Arnprior.
Ritchie, J. F. .....Arnprior.
Ritter, Samuel G. .....Ahmic Harbour.
Rothera, Charles F. .....Sturgeon Falls.
Ryan, Alfred .....Byng Inlet.
Rogers, Fred .....Sault Ste. Marie.
Reid, George William ....Fort Frances.
Robertson, John A. .....Kenora.
Robinson, Wm. .....Bobcaygeon.
Reid, Joseph B. .....Lindsay.
Ross, Walter M. .....Ottawa.
Ruttle, H. A. .....Carleton Place.
Richards, Benedict .....Ottawa.
Regan, John .....Orillia.
Russel, Wm. .....Pembroke.
Ramsay, Charles .....Sudbury.
Russell, Corsan L. .....Pembroke.
Richards, Henry .....Dacre.
Ryan, Wm. .....Killaloe.
Reid, John P. .....Spanish Mills.
Ridley, Robert .....New Liskeard.
Riley, Charles W. .....Hutton House.
Raymond, Morris T. .....Spanish Mills.
Rooney, Wm. H. .....Campbellford.
Revell, J. O. .....Dryden.
Rankin, Anthony .....Cache Bay.
Ross, Angus .....Orrville.
Robinson, Albert E. .....Washago.
Robinson, Edward .....Washago.
Robinson, Thomas G. ....Washago.
Raycroft, William T. .....Sarnia.
Roberts, Ivor M. .....Garden River.
Revell, Lionel Oliver .... W. Gravenhurst.
Regan, Judd Patrick .....Orillia.
Robins, Etna Rosedale ...Orillia.
Regan, John Jr. .....Orillia.
Ryan, James .....Savanne.
Rusk, Oscar W. .....Cache Bay.
Robinson, Thos. Geo. ....Bracebridge.

Rooksby, Wm. .....Campbellford.
Ramesbottom, Robt. .....Byng Inlet.
Roy, Lewis .....Arnprior.
Riddell, Horace A. ..... Galetta.
Rowan, A. L. ..... Sault Ste. Marie.
Ritchie, James A. .....Spragge.
Ross, George Joseph ..... Schrieber.
Rowe, Frank E. .....Hymers.
Regmibal, J. Hector .... Larchwood.
Reid, William T. .....Fort Frances.
Ross, Sidney ..... Fort William.
Robinson, Thos. ..... Kenora.
Robertson, J. D. .....Kenora.
Richardson, C. R. ..... Fort Frances.
Richey, A. W. .....Sudbury.
Robinson, W. J. ..... Dryden.
Smith, M. D. ..... Fort William.
Scanlan, William .....Enterprise.
Sutherland, D. H. ..... Gravenhurst.
Spanner, John .....Huntsville.
Shier, James D. ..... Bracebridge.
Spooner, W. R. .....Katrine.
Simpson, Alfred E. ..... Wakefield.
Souliere, John B. .....Ottawa.
Shields, James A. ..... Carleton Place.
Spargo, George ..... Ottawa.
Smyth, W. H. .....Baysville.
Salmon, R. H. .....Byng-Inlet North.
Salmon, Alexander C. ....Baysville.
Stremer, A. ..... Ottawa.
Shields, Frank A. ..... Parry Sound.
Stapleton, John J. ..... Ogidakie.
Sloan, William H. .....Fort Frances.
Smyth, Job E. ..... Cache Bay.
Sage, Nelson .....Muskoka Mills.
Seymour, Edward .....Whitefish.
Shaw, Thomas B. ..... Waubaushene.
Swanston, James ..... Peterborough.
Simpson, William ..... Hall's Bridge.
Sadler, Thomas ..... Lindsay.
Smith, Patrick Albert ....Norman.
Snaith, William J. .....Mattawa.
Sinn, William F. ..... Arnprior.
Sheppard, Wm. Joseph ...Waubaushene.
Spears, Milton B. .....Barry's Bay.
Stevenson, Arthur ..... Peterborough.
Stein, Paul .....Sault Ste. Marie.
Shaw, Alfred ..... Thessalon.
Sequin, Napoleon ..... Spanish Station.
Scrim, Robert .....Arnprior.
Sharp, James A. .....Sudbury.
Shaneay, Harry S. .....Cook's Mills.
Smith, Wm. .....Ottawa.
Stewart, Daniel ..... Braeside.
Sheehan, Michael H. .... Waubaushene.
Smith, Sydney H. ..... Bracebridge.
Stewart, James A. .....Pembroke.
Sproule, Newton H. ..... Schomberg.
Simmons, Alex. .....Port Arthur.
Scott, Thomas .....Parry Sound.
Smith, Lawrence ..... W. Saginaw, Mich.
Shea, Stewart .....Campbellford.
Sullivan, John .....Sault Ste. Marie.
Sinclair, Finlay ..... Sudbury.

Appendix No. 12.—Continued.

LIST OF CULLERS.—Continued.

Shiels, Henry F. .....Cartier.
Smith, Gideon Ousley ... Burk's Falls.
Smith, John Wallis ..... Thedford.
Smith, Henry G. .....Arnprior.
Story, John A. .....Ottawa.
Sweezy, Benjamin .....Massey.
Sheppard, Charles H. .... Coldwater.
Seabrook, Alex. .....Fabre P.O.
Spreadborough, Newlands. Little Current.
Sheffield, George ..... Chapleau.
Sanders, William J. .... Sudbury.
Sinclair, Armon D. ..... Arnprior.
Smith, Sidney E. ..... Ottawa.
Sleeman, Wm. ..... Rapid River.
Sheehan, Peter F. .....Loring (canc'l'd).
Sleeman, Geo. ..... Rapid River.
Sims, Wm. K. ..... Sault Ste. Marie.
Skahill, Wm. ..... Blind River.
Shaw, George ..... Thessalon.
Sarsfield, George Francis..Sault Ste. Marie.
Standish, Wm. H. .....Batchawaning.
Simpson, Wm. A. .....Lakefield. [Bay.
Scollard, Wm. ..... Young's Point.
Shuttleworth, Alma ..... Trout Creek.
Shanacy, Wm. J. ..... Spragge.
Seely, George .....Arnprior.
Stewart, Alex. W. .....Lanark.
Soreny, Wm. ..... Braeside.
Schneder, Frederick .....Cache Bay.
Smith, James D. ..... Kenora.
Sullivan, James ..... Aylmer.
Scully, Cornelius .....Whitney.
Savoy, Eutrope .....North Bay.
Smith, Walter J. .....Campbellford.
Seymour, John J. ..... Whitefish.
Smith, Alex. R. C. ..... Burk's Falls.
Stewart, Richard M. .....Chelsea, Que.
Souliere, John H. ..... Canoe Lake.
Smith, Abraim G. ..... Quyon, Que.
Swallow, C. H. .....Day Mills.
Strave, A. M. ..... Mine Centre.
Stewart, John .....Fort Frances.
Sullivan, George L. ..... Rainy River.
Short, James ..... Kenora.
Shaw, Fred. Jason .....Thessalon.
Short, Chas. J. ..... Kenora.
Smith, David H. ..... Sudbury.
St. Hillaire, George .....Arnprior.
Souliere, Joseph C. .....Cutler.
Scott, J. C. ..... Fort Frances.
Stewart, Frank E. .....Crozier.
Sanders, Edward .....Barwick.
Spence, William .....Arnprior.
Scott, Allan A. .....Norman.
Souliere, Max .....Spanish Mills.
Stewart, David .....Cache Bay.
Shaw, Donald .....Keewatin.
Smyth, C. W. .....Fort Frances.
Stewart, Jas. Max ..... Winnipeg, Man.
Stewart, Russell C. ..... Winnipeg, Man.
Sisson, Heber P. ..... Hymers.
Schultz, Albert .....Pembroke.
Spavin, John .....Westmeath.
Spense, Dalton .....Parry Sound.
Sparling, S. W. .....Richan.

Smith, L. G. .....Worthington.
Skead, Eric S. .....Spanish Mills.
Sullivan, Michael .....Barry's Bay.
Swale, William .....Gillies Depot.
Schreiber, C. C. .....Sudbury.
Taylor, Fred. L. ..... Parry Sound.
Thomas, Griff J. .....Thessalon.
Thomson, R. D. ..... Biscotasing.
Tait, Thomas B. .....Burk's Falls.
Taylor, C. M. .....Gravenhurst.
Thornton, W. D. .....Longford Mills.
Trussler, Gilbert ..... Trout Creek.
Thompson, Geo. S. .....Lindsay.
Thompson, Fred. A. H. ...Nosbonsing.
Thompson, Francis Hy. ..Nosbonsing.
Train, A. C. .....Rowan Mills.
Turgeon, Geo. ..... Cook's Mills.
Thayer, Wm. .....Sault Ste. Marie.
Thompson, Alexander W..Arnprior.
Taylor, Thos. G. .....Gravenhurst.
Trowse, A. .....Arnprior.
Tucker, Louis A. .....Fort Francis.
Thompson, Daniel ..... P'rt'ge du F'rt, Q.
Thompson, Richard ..... Kenora.
Thompson, Joseph H. .... Bracebridge.
Taylor, Edward A. .....Westmeath.
Tait, Ralph .....Arnprior.
Train, William .....Burk's Falls.
Turner, Garvin F. .....North Bay.
Tilson. Joseph .....Burk's Falls.
Tuffy, John .....Cartier.
Thorpe, Thomas ..... Pembroke.
Taylor, Charles E. .....Gravenhurst.
Tench, Arthur .....Hekkla.
Tulloch, William A. .....Sault Ste. Marie.
Taylor, Alex. M. .....Burnstown.
Toner, J. A. .....P'rt'ge du F'rt, Q.
Thrasher, Henry G. ..... Pembroke.
Tooke, Frank ..... Bala.
Thorburn, Donald James .Thessalon.
Tetreault, Philias ..... Tomiko.
Tibbets, L. R. .....Fort Frances.
Tichborne, A. C. .....Fort Frances.
Thomson, Donald .....Arnprior.
Udy, Dean .....French River.
Urquhart, Elias .....Gravenhurst.
Urquhart, Andrew ..... Barrie.
Vigrass, Percy J. .....Dufferin Bridge.
Vincent, Joseph .....Warren.
Vollin, Samuel .....Nosbonsing.
Vannier, Nelson Joseph... Bobcaygeon.
Vincent, James .....Fesserton.
Vincent, Henry T. ..... Port Sidney.
Vanderburg, Norman .....Wisawasa.
Valois, Armand .....Mattawa.
Villiers, Claude ..... Parry Sound.
Vanier, John .....Sault Ste. Marie.
White, Thomas S. .....Bracebridge.
White, A. Thomson .....Pembroke.
Watt, R. A. .....Spanish.
Wilkins, Hughes .....Blind River.
Wallace, T. William .....Blind River.
White, Joseph W. .....Bracebridge.
Watson, William .....Huntsville.
Webb, George W. ..... Parry Sound.

Appendix No. 12.—Concluded.

LIST OF CULLERS.—Concluded.

Wilcox, Thomas	Parry Sound.
Wheeler, J. A. McL.	Tamworth.
Widdifield, C. H.	Pine Orchard.
Whitmore, Edgar	Rosseau Falls.
Wright, L. B.	Sault Ste.Marie.
Ward, Joseph W.	Ottawa.
Wilkinson, W.	French River.
Waldie, John E.	Victoria Harbour.
Wigg, Thomas G.	Thessalon.
Wall, Patrick B.	Cheboygan, Mich.
Wells, John R.	Little Current.
Whiteside, John	Huntsville.
Watt, William	Peterborough.
Wilson, George	Lindsay.
White, Thomas	Parry Sound.
Wood, William D.	Sault Ste. Marie.
Watts, John J.	Fort Frances.
Webster, George F.	Fort Frances.
Wright, Percy	Fort Frances.
Watts, William B.	Fort Frances.
Watson, William	North Bay.
Wagner, Fred.	Kenora.
Wainwright, Edward C.	Huntsville.
Wilson, Wm. James	Deseronto.
Weston, Frank R.	Midland.
White, James B.	Manitowaning.
Warren. Robert M.	Cache Bay.
Wilson, George A.	Balsam Hill.
Welch, Harold	Milberta.
Wilson, James A., Jr.	Webbwood.
Woods, John R.	Antrim.
Wardell, Ernest C. S.	Victoria Harbour.
Woods, Joseph F.	Roach's Point.
Whaley, Thomas	Huntsville.
Webster, Wm. Alfred	Bracebridge.
Wornsdorf. Fred. Gutlep	Pembroke.
Warrell, Wm.	Trout Creek.
Wims, Peter	Blessington.
Wickware, Philip Almont	Cloyne.
Wilson, Edward	Deseronto.
Whelan, P. J.	McDougall.
Whyte, John, Thos. Goth	Ottawa.
Watterworth, J. A.	Sault Ste. Marie.
White, Wm. James	Muskoka Falls.
Warrell, George	Powassan.
Wells, George W.	Little Current.
Wilson, Frederick Gould	Kenora.
Wallace, John Thomas	Thessalon.
Wilkins, George N.	Baysville.
Wylie, Byron M.	Webbwood.
White, Allan	Pembroke.
Warner, Franklin H.	Fort Frances.
Watts, George	Fort Frances.
Wood, Thomas	Parry Sound.
White, William	Peterborough.
Woods, A. L.	Kenora.
White, John B.	Kippewa, Que.
Whelan, Peter M.	Renfrew.
Wilson, David	Kearney.
Weston, Cecil	Dorset.
Wilkins, George E.	Dorset.
Woodcock, Edward	Brownhill.
Wilson, Fred.	Callender.
Wilson, Alexander R.	Thessalon.
Webster, Henry R.	North Lake.
Wallace, Fred. R.	Port Arthur.
Wallace, Clayton	Blind River.
Wilson, Russell	Pembroke.
Wheeler, George	Barwick.
Wall, G. L.	La Valiee.
Williams, Edward R.	Port Arthur.
Whalen, Jos.	Pembroke.
Younge, Harvey D.	Fort Frances.
Young, R. H.	Fort Frances.
Yuill, John Albert	Braeside.
Young, William	Severn Bridge.
Young, A. J.	Cache Bay.
Young, Samuel	Coldwater.
Young, Patrick P.	Young's Point.
Young, Francis G.	Young's Point.
Yuill, Thomas	Arnprior.
Yuill, A. D.	Braeside.
Young, C. T.	Harvey.
Yuill, John Alex.	Arnprior.
Yuill, Archibald	Bracebridge.
Yuill, William	Braeside.
Young, Walter D.	Whitefish.

Appendix No. 13.

LETTERS RECEIVED.

From Crown Land Agents	5,311
" Mining Recorders	2,949
" Crown Timber Agents	2,934
" Homestead Inspectors	1,062
" Fire Rangers	666
" Superintendent of Algonquin Park	346
" Superintendent of Quetico Park	130
Orders-in-Council	101
Telegrams	264
From all other sources	33,555
Total pieces incoming (Minister's office not included)	47,318

LETTERS SENT OUT.

Letters sent to Agents, Recorders, Inspectors, Rangers and Superintendents	15,292
Letters to other sources	16,543
Circular letters (Timber Sales)	1,201
Maps and blue prints	2,511
Mining Reports to foreign countries	305
Mining Acts	1,215
Total pieces outgoing (Minister's office not included)	37,067
Postage for the year	$2,951.46
New files made during the year	10,700
Account files made during the year (chargeable)	423
Account files made during the year (free)	266

S. K. BURDIN,
Chief Clerk.

ALBERT GRIGG,
Deputy Minister.

Appendix No. 14.

Statement showing the number of Locatees and of acres located; of purchasers and of acres sold; of lots resumed for non-performance of the settlement duties and of patents issued in Free Grant Townships during the year ending 31st October, 1916.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of lots resumed.	No. of patents issued.
Baxter	Muskoka	J. B. Brown, Bracebridge	1	25	1	25	....	3
Brunel	"	" "	1	100	...	.....	1	5
Cardwell	"	" "	....	.....	1	1	....	3
Chaffey	"	" "	1	100	...	.....	1	1
Draper	"	" "	....	.....	...	.....	....	....
Franklin	"	" "	2	281	1	50	2	2
Freeman	"	" "	....	.....	...	.....	....	1
Macaulay	"	" "	1	200	...	.....	2	....
Medora	"	" "	....	.....	...	.....	....	3
Monck	"	" "	....	.....	...	.....	....	1
Morrison	"	" "	....	.....	...	.....	....	....
Muskoka	"	" "	1	200	...	.....	2	1
McLean	"	" "	1	102	1	1	1	3
Oakley	"	" "	3	384	1	3	2	2
Ridout	"	" "	....	.....	...	.....	....	....
Ryde	"	" "	2	311	...	.....	1	1
Sherborne	Haliburton	" "	4	376	...	.....	1	1
Sinclair	Muskoka	" "	2	400	...	.....	4	5
Stephenson	"	" "	1	100	...	.....	1	2
Stisted	"	" "	1	99	...	.....	1	2
Watt	"	" "	....	.....	...	.....	....	1
Wood	"	" "	1	203	15	41¾	1	20
Burpee	Parry Sound	Miss I. M. Campbell, Parry Sound	5	701	...	.....	2	2
Carling	"	" "	2	200	1	10	1	2
Christie	"	" "	3	282	...	.....	2	1
Conger	"	" "	....	.....	1	12	1	2
Cowper	"	" "	....	.....	1	12	....	6
Foley	"	" "	....	.....	...	.....	....	....
Ferguson	"	" "	1	194	...	.....	....	1
Hagerman	"	" "	....	.....	...	.....	....	1
Harrison	"	" "	1	241	4	58	....	11
Henvey	"	" "	3	345	...	.....	....	....
Humphrey	"	" "	....	.....	...	.....	....	....
McConkey	"	" "	1	200	...	.....	1	1
McDougall	"	" "	....	.....	...	.....	....	1
McKellar	"	" "	....	.....	...	.....	....	1
McKenzie	"	" "	....	.....	...	.....	....	2
Monteith	"	" "	2	287	...	.....	1	....
Shawanaga	"	" "	....	.....	...	.....	1	3
Wilson	"	" "	1	148	2	15	....	1
Chapman	Parry Sound	Dr. J. S. Freeborn, Magnetawan	1	116	1	8	1	3
Croft	"	" "	2	300	1	5	2	3
Ferrie	"	" "	....	.....	...	.....	....	....
Gurd	"	" "	4	467	...	.....	2	2
Lount	"	" "	4	485	...	.....	2	1
Machar	"	" "	8	1,192	3	104	8	5
Mills	"	" "	....	.....	2	200	....	1
Pringle	"	" "	2	348	1	21	2	....

Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of lots resumed.	No. of patents issued.
Ryerson.....	Parry Sound..	Dr. J. S. Freeborn, Magnetawan.	....	.....	...	.....	....	3
Spence	"	" " "	1	201	2	47	....	1
Strong	"	" " " "	....	.....	...	.....	....	....
Armour.....	Parry Sound..	W. Jenkin, Emsdale.	....	.....	...	.....	....	....
Bethune	"	" " "	1	76	...	.....	1	1
Joly	"	" " "	1	100	...	.....	....	3
McMurrich ...	"	" " "	1	36	...	.....	1	....
Perry	"	" " "	....	.....	...	.....	....	1
Proudfoot	"	" " "	....	.....	...	.....	....	....
Hardy	Parry Sound..	H. J. Ellis, Powassan..	....	.....	...	.....	....	1
Himsworth ..	"	" " "	4	820	2	71	3	10
Laurier.....	"	" " "	1	200	...	.....	....	1
Nipissing	"	" " "	3	400	1	100	....	4
Patterson....	"	" " "	1	100	...	.....	....	....
Bonfield.... .	Nipissing	W. J. Parsons, North Bay...	6	553	...	.....	3	3
Boulter	"	" " "	2	204	2	14	....	3
Chisholm	"	" " "	5	667	...	.....	3	8
Ferris	"	" " "	10	1,092	1	100	8	15
Anson	Haliburton ...	R. H. Baker, Minden.....	1	103	1	3	....	2
Glamorgan ..	"	" "	5	798	1	2	5	1
Hindon	"	" "	....	.....	...	.....	....	....
Lutterworth..	"	" "	2	185	1	29	2	2
Minden	"	" "	1	100	...	.....	....	1
Snowdon	"	" "	2	300	...	.....	2	....
Stanhope.....	"	" "	2	310	...	.....	2	1
Anstruther ...	Peterborough .	William Hales, Apsley	....	.....	...	.....	....	1
Burleigh, N.D.	"	" "	....	.....	...	.....	....	....
" S.D.	"	" "	....	.....	1	215	1	1
Chandos	"	" "	....	.....	...	.....	....	....
Methuen	"	" "	1	150	...	.....	....	....
Cardiff.....	Haliburton ...	A. N. Wilson, Kinmount.....	7	874	...	.....	6	6
Cavendish....	Peterborough .	" "	4	703	5	58	2	....
Galway	"	" "	4	400	1	2	5	6
Monmouth ...	Haliburton ...	" "	4	435	...	.....	8	2
Bangor	Hastings	W. J. Douglas, Greenview...	....	.....	...	.....	....	....
Carlow.....	"	" " "	....	.....	...	.....	....	1
Cashel	"	" " "	1	100	...	.....	....	....
Dungannon ..	"	" " "	....	.....	1	2	....	2
Faraday	"	" " "	4	447	...	.....	2	3
Herschel	"	" " "	13	1,660	2	13	3	1
Limerick.....	"	" " "	3	212	...	.....	1	....
Mayo	"	" " "	5	590	...	.....	2	....
Monteagle ...	"	" " "	4	398	...	.....	1	4
McClure	"	" " "	1	101	2	122	....	1
Wicklow	"	" " "	....	.....	1	1	....	....
Wollaston....	"	" " "	....	.....	...	.....	....	1
Algona, S.....	Renfrew.....	Adam Prince, Wilno.....	2	111	...	.....	....	....
Brougham ...	"	" "	3	403	1	15	5	1
Brudenell ...	"	" "	2	318	...	.....	2	1
Burns	"	" "	....	.....	...	.....	....	1

Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of lots resumed.	No. of patents issued.
Grattan	Renfrew	Adam Prince, Wilno	1	104	...	...	....	5
Griffith	"	" "	....	...	1	100	....	
Hagarty	"	" "	....	...	...	...	....	
Jones	"	" "	3	475	...	...	....	....
Lyell	Nipissing	" "	3	410	...	...	....	1
Lyndoch	Renfrew	" "	2	236	1	52½	2	5
Matawatchan	"	" "	1	100	...	...	....	....
Radcliffe	"	" "	2	318	...	...	2	1
Raglan	"	" "	3	254	...	...	....	12
Richards	"	" "	2	398	1	19	1	5
Sebastopol	"	" "	....	...	...	...	....	3
Sherwood	"	" "	4	249	2	84	....	2
Algona, N.	Renfrew	Finlay Watt, Pembroke	1	101	...	...	....	1
Alice	"	" "	....	...	...	...	....	2
Buchanan	"	" "	1	100	...	...	....	....
Fraser	"	" "	....	...	...	...	....	1
Head	"	" "	....	...	...	...	....	....
Maria	"	" "	....	...	...	...	....	....
McKay	"	" "	....	...	...	...	....	....
Petawawa	"	" "	....	...	...	...	....	....
Rolph	"	" "	1	100	...	...	1	1
Wilberforce	"	" "	....	...	...	...	....	....
Wylie (pt)	"	" "	....	...	...	...	....	2
Calvin	Nipissing	Robert Small, Mattawan	3	294	...	...	3	1
Cameron (pt)	"	" "	4	656	...	...	....	1
Lauder	"	" "	1	100	1	14	....	....
Mattawan	"	" "	....	...	1	80	....	....
Papineau	"	" "	7	700	...	...	1	4
Korah	Algoma	Edw'd Noble, Sault Ste. Marie	....	...	...	...	....	....
Parke	"	" "	....	...	...	...	....	....
Prince	"	" "	1	80	...	...	1	3
Aberdeen	Algoma	Thos. Dodds, Thessalon	3	416	...	...	2	....
" add.	"	" "	....	...	...	...	....	....
Galbraith	"	" "	....	...	...	...	....	....
Lefroy	"	" "	....	...	...	...	....	....
Plummer	"	" "	....	...	...	...	....	....
" add.		" "	....	...	...	...	....	....
St. Joseph Is'd	Algoma	W. E. Whybourne, Marksville	4	594	...	...	5	5
" Ch'nl "	.....	.....	....	...	...	...	....	1
Baldwin	Algoma	Edward Arthurs, Espanola	3	480½	2	2	4	3
Merritt	"	" "	....	...	...	...	....	1
Blake	Thunder Bay.	W. A. Burrows, Port Arthur	3	360	...	...	2	5
Conmee	"	" "	6	795	2	133½	3	9
Crooks	"	" "	1	160	...	...	1	4
Dawson Road	"	" "	8	848	3	86	8	2
Dorion	"	" "	2	261¾	1	138	2	3
Gillies	"	" "	1	157½	1	161½	1	3
Gorham	"	" "	13	1,784	2	78½	10	13
Lybster	"	" "	2	322½	...	...	....	1
Marks	"	" "	2	316	...	...	3	2
McGregor	"	" "	4	639	...	...	5	4
McIntyre	"	" "	....	...	...	...	....	3
O'Connor	"	" "	1	162	...	...	1	8

Appendix No. 14.—Continued.

Township.	District or County.	Agent.	No. of persons located.	No. of acres located.	No. of purchasers.	No. of acres sold.	No. of lots resumed.	No. of patents issued.
Oliver	Thunder Bay.	W. A. Burrows, Port Arthur	4	636½	2	9½	3	3
Paipoonge, N R	"	" "	....	.....	...	.....	....	2
" S R	"	" "	....	.....	...	.....	....	1
Pardee	"	" "	4	640	...	.....	1	....
Pearson	"	" "	9	1,496	1	80¼	8	4
Scoble	"	" "	2	319	...	.....	2	1
Stirling	"	" "	9	1,435	2	114½	11	....
Strange	"	" "	1	159	1	2	1	4
Ware	"	" "	8	1,280½	2	100	9	17
Atwood	Rainy River.	William Cameron, Stratton	....	.....	...	.....	....	....
Blue	"	" "	9	1,301	2	84	6	2
Curran	"	" "	....	.....	...	.....	1	1
Dewart	"	" "	6	806	1	2	5	1
Dilke	"	" "	....	.....	...	.....	....	2
Morley	"	" "	2	242	2	3	2	3
Morson	"	" "	10	1,444	3	164	12	7
McCrosson	"	" "	3	360¼	1	30	....	....
Nelles	"	" "	1	164	...	.....	1	....
Pattullo	"	" "	4	548	3	6	3	4
Pratt	"	" "	3	462½	...	.....	2	2
Rosebery	"	" "	....	.....	...	.....	....	....
Shenston	"	" "	....	.....	...	.....	....	1
Sifton	"	" "	6	208¼	...	.....	6	5
Spohn	"	" "	12	1,756½	...	.....	6	....
Sutherland	"	" "	14	1,966	...	.....	9	1
Tait	"	" "	12	1,569	3	10	12	5
Tovell	"	" "	10	1,457¼	1	2½	7	2
Worthington	"	" "	....	.....	...	.....	....	3
Aylsworth	Rainy River	Alex. McFayden, Emo	....	.....	...	.....	....	....
Barwick	"	" "	....	.....	...	.....	....	....
Burriss	"	" "	1	200½	4	37½	1	6
Carpenter	"	" "	2	345	...	.....	1	6
Crozier	"	" "	1	122	2	43	1	4
Dance	"	" "	9	1,461	3	24½	8	7
Devlin	"	" "	....	.....	1	2	....	4
Dobie	"	" "	....	.....	3	14½	....	6
Fleming	"	" "	....	.....	...	.....	....	....
Kingsford	"	" "	5	802	...	.....	5	1
Lash	"	" "	....	.....	2	8	....	2
Mather	"	" "	3	491½	1	18	3	6
Miscampbell	"	" "	4	685	...	.....	4	6
Potts	"	" "	3	485½	1	2	3	2
Richardson	"	" "	11	1,724¾	...	.....	7	2
Roddick	"	" "	....	.....	...	.....	....	....
Woodyatt	"	" "	....	.....	...	.....	....	....
Aubrey	Kenora	J. E. Gibson, Dryden	5	478½	...	.....	5	1
Britton	"	" "	2	322	1	2	2	....
Eton	"	" "	2	319½	...	.....	2	2
Langton	"	" "	5	662½	...	.....	2	....
Melgund	"	" "	....	.....	...	.....	....	1
Mutrie	"	" "	2	328	1	135	2	1
Redvers	"	" "	26	3,662¾	3	151	2	....
Rowell	"	" "	1	119	...	.....	....	1
Rugby	"	" "	1	160	2	77	2	1
Sanford	"	" "	2	158	3	279½	4	4
Southworth	"	" "	1	151½	1	2	2	....
Temple	"	" "	2	320	...	.....	1	2

Appendix No. 14.—Concluded.

Township.	District or County.	Agent.	No. of persons located.	No of acres located.	No. of purchasers.	No. of acres sold.	No. of lots resumed.	No. of patents issued.
Van Horne ...	Kenora	J. E. Gibson, Dryden...	2	160	2	677	1	5
Wabigoon	"	" "	5	760½	2	145¼	8	4
Wainwright ..	"	" "	5	822	1	79¾	1	3
Zealand	"	" "	14	2,224	2	65½	15	4
Melick	Kenora	W. L. Spry, Kenora	6	793½	1	25	14	2
Pellatt.....	"	" "	2	250	... .		6	3
Balfour	Sudbury.....	J. K. MacLennan, Sudbury ..	2	265	... .		1	3
Blezard	"	" "	....	.....	... .		....	2
Broder.....	"	" "	3	443½	1	19	....	8
Capreol	"	" "	1	81¾	... .		2	5
Chapleau.....	"	" "	2	276	1	78	....	2
Dill.....	"	" "	9	1,460½	... .		3	2
Garson.....	"	" "	7	966½	... .		4	3
Hanmer.....	"	" "	6	1,026½	1	2	6	2
Lumsden.....	"	" "	3	479	1	321	....	1
Morgan.....	"	" "	3	471	... .		3	1
Neelon.....	"	" "	2	327½	2	99	....	8
Rayside.....	"	" "	1	101	... .		....	5
Appelby.....	Sudbury	John Brown, Markstay	5	803	2	10½	1	4
Casimir	"	" "	4	587½	... .		1	1
Dunnet.....	"	" "	4	620½	2	6	....	4
Hagar	"	" "	7	1,118½	... .		3	3
Jennings	"	" "	3	479	... .		....	....
Kirkpatrick ..	Nipissing ...	" "	1	160	1	5½	....	2
Ratter.....	Sudbury	" "	6	958	... .		3	2
Caldwell	Nipissing	J. A. Philion, Sturgeon Falls.	2	240	... .		2	3
Cosby.....	Sudbury	" "	6	875½	1	2½	2	5
Grant..... .	Nipissing . .	" "	3	401	... .		1	1
Macpherson ..	"	" "	4	570	... .		....	6
Maitland.....	Sudbury	" "	4	367¼	... .		....	3
Springer	Nipissing	" "	1	110	... .		....	4
Abinger.....	Lennox and Addington	Charles Both, Denbigh	1	119	... .		....	....
Canonto, S....	Frontenac....	" "	....	.....	... .		....	....
" N...	"	" "	....	.....	... .		....	....
Clarendon.. .	"	" "	....	.....	... .		....	....
Denbigh.. .	Lennox and Addington	" "	5	598	... .		2	1
Miller (pt.)...	Frontenac....	" "	1	100	... .		....	....
Palmerston	"	" "	1	100	... .		....	....
McClintock ...	Haliburton....	Unattached	....	.....	1	36	....	1
Airy.....	Nipissing.....	"	4	613½	1	1	1	2
Finlayson....	"	"	....	.....	1	25	....	1
Murchison ...	"	"	....	.....	... .		....	....
Sabine	"	"	6	655	... .		1	1
			620	85,139	155	5,191½	417	489

No. of lots assigned	No. of acres assigned
232	30,694½

SELBY DRAPER, Clerk in Charge.

A. GRIGG, Deputy Minister.

Appendix No. 15.

Statement of Crown Surveys completed and closed during the twelve months ending Ooctober 31st, 1916.

No.	Date of Instructions.	Name of Surveyor.	Description of Survey.	Amount paid.	No. of Acres.
				$ c	
1	Sept. 15, 1915.	E. R. Bingham ..	Subdivision of Township of Owens, District of Temiskaming	3,876 20	51,934
2	Oct. 15, 1915.	R. S. Code	Survey of a tie line in the vicinity of Kowkash, District of Thunder Bay	636 86	
3	July 9, 1915	T. G. Code	Subdivision of Township of Cody, District of Temiskaming	713 20	11,799
4	Oct. 23, 1915.	J. W. Fitzgerald.	Subdivision of parts of Townships of Hall, Joffre, Carew and Cavell, in the District of Sudbury	2,017 75	15,344
5	Aug. 10, 1915	Phillips & Benner	Subdivision of the Township of Forbes, District of Thunder Bay.	3,100 10	33,357
6	June 24, 1915.	A. L. Russell	Survey of additional lands to the Townships of Ware and Gorham, in the District of Thunder Bay..	1,344 79	6,451
7	July 27, 1915.	E. Seager	Subdivision of Township of Colenso, in the District of Kenora.	1,763 30	23,035
8	Mch. 21, 1916.	M. E. Crouch	Subdivision of the Township of Nepigon additional, District of Thunder Bay	3,274 20	20,094
9	Jan. 6, 1916.	Speight & Van Nostrand	Survey of Lady Evelyn Lake, District of Temiskaming	3,301 63	.....
10	May 31, 1916	McAuslan & Anderson	Subdivision of the Town Plots of Grant and Armstrong, District of Thunder Bay.	1,051 68	.....
11	Jan. 21, 1916.	McAuslan & Anderson	Survey of Peter Long Lake, in the District of Temiskaming and Sudbury	3,228 98	.....
12	July 4, 1916.	M. E. Crouch ...	Subdivision of the Township of Hele, District of Thunder Bay ..	4,499 70	30,452
13	Mch. 5, 1913.	E. Seager	Survey of Timber Berths K 23 and K 23*a*. District of Kenora	157 94	.....
14	Apr. 20, 1916.	A. S. Code	Survey of part of Peninsula No. 2, Lake Shore Road West con., Township of Bosanquet	90 00	.....
			A. J. Milden—Services on survey of Interprovincial Boundary at Lake St. Francis	28 00	.....
				29,084 33	192,466

L. V. RORKE,
Acting Director of Surveys.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 16.

Statement of Crown Surveys in progress during the twelve months ending October 31st, 1916.

No.	Date of Instructions.	Name of Surveyor.	Description of Survey.	Amount Paid.
				$ c.
1	Apr. 15, 1915.	J. S. Dobie	Survey of islands north and west of Manitoulin Island, Districts of Algoma and Manitoulin	5,000 00
2	Apr. 20, 1915.	Lang & Ross	Survey of islands on the North Shore of Lake Huron and Georgian Bay, Districts of Manitoulin, Sudbury and Parry Sound.	9,500 00
3	Apr. 16, 1915.	T. J. Patten	Survey of islands in Lake Huron, east and north-east of Manitoulin Island, District of Manitoulin	5,800 00
4	May 26, 1916.	Phillips & Benner	Survey of Nepigon Forest Reserve in the District of Thunder Bay	4,500 00
5	June 13, 1916.	David Beatty ...	Survey of the Township of Foleyet, in the District of Sudbury	3,000 00
6	June 30, 1916.	R. S. Code	Survey of Township of Muskego, in the District of Sudbury	3,800 00
7	Sept. 5, 1916	J. W. Fitzgerald.	Survey of Township Outlines, District of	
8	Sept. 21, 1916	McAuslan & Anderson	Algoma	3,000 00
			Survey of Town Plot of Bear Island in the District of Nipissing	200 00
9	July 31, 1916	R. S. Code	Survey of part of the Township of Keith, District of Sudbury	.....
10	Oct. 18, 1916	McAuslan & Anderson	Survey of line between Townships of Gooderham and Kenny, District of Nipissing	.....
11	Oct. 23, 1916	Sutcliffe & Neelands	Survey of lines in Townships of Ogden, Bristol and Thornloe, District of Temiskaming	.....
				34,800 00

L. V. RORKE,
Acting Director of Surveys.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 17.

Statement of Municipal Surveys for which instructions issued during the 12 months ending October 31st, 1916.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Survey.
1	Speight & Van Nostrand.....	705	Dec. 9th, 1915..	To survey Lots "J," "K" and "L," as shown on plan of subdivision of part of Lot 19, Concession 2 from the bay in the Township of York, and to plant stone or other durable monuments at the northerly angles of the said lots.
2	McKay, McKay & Webster...	706	Jan. 13th, 1916.	To survey the boundaries of Allan Street in the Town of Oakville and to plant durable monuments defining the limits of the said street in the said Town of Oakville.
3	Herbert J. Beatty.....	707	Aug. 28th, 1916.	To survey and plant stone or other durable monuments to mark the northeasterly boundary of Lots 9, 10 and 11, in the 2nd Concession of the Township of Horton (now within the limits of the Town of Renfrew), in the County of Renfrew, and also to mark the road allowance between the east halves of said Lots 10 and 11 in the said concession.

L. V. RORKE,
Acting Director of Surveys.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 18.

Statement of Municipal Surveys confirmed during the 12 months ending October 31st, 1916.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Survey.	Date when confirmed under R.S.O. 1914, Chap. 166, Secs. 10-15 inclusive.
1	Wilbert S. Gibson.	688	Mar. 19, 1913...	To survey the allowance for road between the 1st and 2nd ranges, Credit Indian Reserve, south of Dundas Street, Tp. of Toronto, from the northwest angle of Lot No. 8, 1st range, across Lots Nos. 9, 10, 11, 12, 13 and 14 in the 1st range, and Lots Nos. 6, 9 and 10 in the 2nd range, Credit Indian Reserve, and thence along the road allowance between the 2nd range, Credit Indian Reserve, and the 2nd Concession of Toronto Township south of Dundas Street, being across part of Lot 22, Lot 23, Lot 24 and Lot 25 in the 2nd Concession south of Dundas Street, to the westerly limit of said Lot 25, being the easterly limit of the allowance for road between Lots Nos. 25 and 26, known as the "Lorne Park Road," and as regards the 2nd range on the northerly side of said road allowance, being across parts of Lot No. 10, Lots 11 and 12, and part of Lot 13, in the 2nd range, Credit Indian Reserve, and to define said allowance for road by permanent stone or iron monuments planted on each side thereof.	Nov. 16th, 1915.
2	E. R. Bingham....	695	Nov. 26th, 1914.	To survey a portion of the City of Port Arthur in the District of Thunder Bay, between John Street and McVicar and River Streets and between Algoma and High Streets, being the balance of what was known as the old town plot of Prince Arthur's Landing, and to have the corners of all the streets marked by iron bars, duly planted thereat.	Apr. 13th, 1916.
3	Jas. J. MacKay...	699	June 21st, 1915.	To survey the limits of Mountain Park Avenue in the City of Hamilton, from the west side of Wentworth Street to Lakeview Avenue, and of Wentworth Street from the allowance for road between the 3rd and 4th Concessions of the Township of Barton and the brow of the mountain	Dec. 23rd, 1915.

Appendix No. 18.—Concluded.

Statement of Municipal Surveys confirmed during the 12 months ending October 31st, 1915.

No.	Name of Surveyor.	No.	Date of Instructions.	Description of Surveys.	
	Jas. J. MacKay (Continued.)	....	.....	now in the City of Hamilton, and to plant durable monuments showing the northerly and southerly boundaries of Mountain Park Avenue, between Wentworth Street and Lakeview Avenue, and the easterly and westerly boundaries of Wentworth Street between the allowance for road between the 3rd and 4th Concessions of the Township of Barton and the brow of the mountain.	
4	S. B. Code.....	701	July 2nd, 1915.	To survey the 6th Concession line from Lot No. 25 at the side road to Lot No. 18 in the Township of Goulburn, and to have durable monuments planted at the corners of the above lots.	Nov. 26th, 1915.
5	J. L. Morris.....	702	Sept. 2nd, 1915.	To survey the Concession Line between Concessions 8 and 9, opposite Lots Nos. 1, 2 and 3, in the Township of Westmeath, in the County of Renfrew, or as much farther as may be necessary on either side, and to mark the same by permanent stone or other durable material.	Dec. 20th, 1915.
6	F. M. Eagleson....	703	Oct. 15th, 1915.	To survey part of the Concession Road Allowance between the 6th and 7th Concessions of the Township of Kenyon, from the east side of Lot No. 7 to the west side of Lot No. 12, and also of the road allowance between Lots Nos. 6 and 7 in the 6th Concession, and to plant durable monuments to define said road allowance opposite the above lots.	May 22nd, 1916.
7	Speight & Van Nostrand.....	705	Dec. 9th, 1915..	To survey Lots "J," "K" and "L," as shown on plan of subdivision of part of Lot 19, Concession 2 from the bay in the Township of York, and to plant stone or other durable monuments at the northerly angles of the said lots, the copy of the plan sent to this Department being part of Registered Plan No. 528, Township of York, shows you the lots J. K and L, on Binscarth Road.	May 16th, 1916.

L. V. RORKE,
Acting Director of Surveys.

ALBERT GRIGG,
Deputy Minister of Lands and Forests.

Appendix No. 19.

SURVEY OF THE TOWNSHIP OF FORBES, IN THE DISTRICT OF THUNDER BAY.

PORT ARTHUR, ONTARIO, Dec. 27, 1915.

SIR,—We beg to report that in accordance with your instructions dated August 10th, 1915, we have completed the survey of the township of Forbes, which is situate north of the Dawson Road lots, west of Dog river and south of Grand Trunk Pacific Block No. 1.

This township is about thirty miles north-west of the city of Port Arthur. Kaministiquia, on the Canadian Pacific Railway, and Dana on the Grand Trunk Pacific Railway are about a mile south of the south-east corner and from these stations a well graded road runs along the east bank of the river to a point opposite concession 1 in Forbes township, this with the Dog river on the east boundary form a good entrance to the east part of the township. On the west side of the river there is a wagon road starting below Paddy's rapids and coming back to the river above the Crooked rapids. The westerly portion of the township is reached most conveniently by the Grand Trunk Pacific Railway, Flett station on this road being in lot I, concession IV, also from this point a wagon road runs south to the Canadian Pacific Railway.

The survey was commenced at the six-mile post on the south boundary of Grand Trunk Pacific Block No. 1, which point was marked by an iron post and a pine post planted by O.L.S. Fawcett in 1907. From this point the west boundary of the township was run south astronomically to intersect the north boundary of the Dawson road lots. The north boundary of the Dawson road lots, being the south boundary of the township, was established by joining in a straight line from point to point, the points established by O.L.S. Bolton between lots 37 and 38, 32 and 33, 27 and 28, 22 and 23, 17 and 18, 12 and 13, and 7 and 8, concession 11, on their north boundaries. To perform this operation it was found necessary to run a trial line from each point to the next, the true line connecting the points being then run and blazed. From the posts at lots 4 and 5 on said north boundary of the Dawson road lots a line was run on a course north eighty-five degrees and twenty-three minutes east to intersect the Dog river, and this line was produced westerly to intersect the production easterly of the line as established across Dawson road lots 8 to 12.

From the points on the north boundary of the township where O.L.S. Fawcett planted his 5, 4, 3, 2, 1 and initial mile posts, lines were run south astronomically to intersect the south boundary, these lines being between lots 2 and 3, 4 and 5, 6 and 7, 8 and 9, 10 and 11, and 12 and 13, respectively. From O.L.S. Fawcett's initial mile post a line was run east astronomically to intersect the Dog river, completing the north boundary, and from a point one mile east of said initial point a line was run south astronomically to intersect the Dog river, this being the line between lots 14 and 15.

At points on the west boundary one and two miles south of the starting point lines were run east astronomically to intersect the Dog river, establishing concessions VII and VIII.

From the south-east corner of lot 8, concession VII, as established, one, two, and three miles were measured south and lines run west astronomically from each of these points to intersect the west boundary and east astronomically to intersect

Dog river, establishing concessions VI, V and IV. From the south-east corner of lot 4, concession IV as established, one mile was measured south and a line run east astronomically from this point to intersect the Dog river, establishing concession III. From the south-east corner of lot 10, concession III, one mile was measured south and a line run east astronomically from this point to intersect the Dog river, establishing concessions I and II; from the point where this line intersects the line between lots 12 and 13, one mile was measured east and a line run south from this point to intersect the south boundary, and north astronomically across concession II and produced to the Dog river.

Throughout the township all the odd numbered lots were made forty chains in width, the posts on the south boundary being planted at such distances as were required to give these lots a perpendicular width of forty chains. Iron posts were planted as shown on the projected plan.

The magnetic variation remained fairly constant at two degrees and fifteen minutes east, and no greater variation than four degrees was observed at any time.

Timber.

Most of the timber of economic value has been destroyed by forest fires which swept the country at various dates. The south-west part of the township and parts of the south-east portion have been burned clean so that there are now but a few scattered trees and a heavy growth of underbrush with an occasional patch of the original timber. Another fire of more recent date has destroyed the timber in the central part of the north half of the township. In the north-east corner of the township there is a considerable stand of the original growth, the merchantable pieces being spruce and banksian pine. This area extends from the north boundary to about the centre of concession VI, and extends from three-quarters of a mile to a mile from the Dog river. There are other patches of large timber further south along the river, but the largest timber in these has been cut some years ago. The remainder is timbered with poplar, banksian pine and spruce, principally, with some patches of birch and tamarac. The banksian pine in the westerly half is larger and more scattered than that on the easterly half which would average from six to eight inches.

Topography.

The land in the western part of the township is of a rolling nature with occassional hills; that in the eastern half is more broken and in some places is badly cut up by ravines, which are, however, pretty well confined to the northerly part of the east part of the township. Along the Dog river through the three southerly concessions there is a considerable area of level land, but the remainder of the land adjacent to the river is for the most part rocky and broken.

Soil.

The soil over the entire township is red clay and clay loam containing varying quantities of sand. There are rock outcrops of some extent and some of the soil is rocky, but from seventy-five to eighty per cent. of the area of the township should be well adapted to agricultural purposes.

Minerals.

There are occasional outcrops of rock scattered over the township, but no mineral matter of economic value was seen, the formation being mostly red and gray granite or trap with quartz stringers showing in places.

Water Courses.

The western half of the township is drained by the Sunshine creek and its tributaries flowing into the Matawin river. In the easterly part the country is more broken and the land is drained by several small streams which flow directly in to the Dog river. No lakes were seen in the interior of the township.

Islands.

In the Dog river in its course along the township there are eight islands, these have been lettered "A" to "H" in the traverse notes; none of these islands are of any value or use. "A" is in the eddy below the Crooked rapids and is small and rocky and difficult to land upon; "B" is in the rapids and inaccessible; "C" is at the head of the rapids and difficult to land upon; "D" is near the foot of the fifteen foot fall into Little Dog lake, and has rapids on two sides of it making it difficult of access; "E" and "F" are in the one hundred and fifty foot fall above Little Dog lake, are small and rocky and inaccessible; "G" is also in this fall but it is possible to land on it; "H" is in the same fall and is inaccessible from either side of the river.

Falls and Rapids.

There are six rapids or series of rapids in the Dog river from the south to the north boundary of the township. The first, known as the Twin rapids, is opposite concession III and has a drop of three feet. The second, known as Paddy's or the Flat rapids opposite lot 15, concession IV, has a fall of one foot. The third is opposite lot 16, concession IV, is known as the Lift over, and has a fall of about two and a half feet. The fourth is also opposite lot 16, concession IV, is known as the Crooked rapids and has a fall of fifteen feet. The fifth is at the head of Little Dog lake and has a fall of eleven feet. The sixth is a series of falls and rapids opposite lot 15, concession VIII and has a total fall of about one hundred and fifty-four feet. No investigations as to the flow of this river were made, the Hydro-Electric Power Commission having taken over the water powers in this river and made all the necessary surveys much more accurately than could be done by us with the limited time and instruments at our disposal.

Improvements.

No clearings were seen within the township and the only thing that could be classed as improvements were a few log cabins which are located as follows: South half of lot 1, concession III; north half of lot 6, concession III; two on the north half of lot 7, concession III; the foundation logs on south part of lot 14, concession IV; and a deserted and decaying cabin on lot 15, concession IV. None of these appear to be occupied and we were unable to locate anyone having any knowledge of them.

GAME.

Numerous indications of deer and moose were seen; beaver are also plentiful on most of the streams; no fish of any size were seen, probably due to the small size of the streams.

We have the honour to be, Sir,

Your obedient servants,

(Signed) PHILLIPS & BENNER,

Per E. P. A. BENNER.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 20.

SURVEY OF THE NORTHERN PORTIONS OF THE TOWNSHIPS OF WARE AND GORHAM, DISTRICT OF THUNDER BAY.

PORT ARTHUR, December 31st, 1915.

SIR,—I have the honour to report that in accordance with your instructions I have completed the survey of the "Projected Base Line running east astronomically from the north-east angle of Gorham township together with the subdivision of remaining portions of concession VIII, township of Gorham and concession VIII, township of Ware, district of Thunder Bay," and beg to submit herewith the usual field notes of survey, also three plans.

First.—General plan on a scale of 40 chains to the inch, showing lines run.

Second.—A plan on a scale of 40 chains to the inch, showing character of land and timber in the eastern portion of concession VIII, Gorham township and east of Jacques township.

Third.—A similar plan on a scale of 40 chains to the inch of concession VIII, township of Ware and the lands west of Jacques township.

The notes in connection with the two latter plans are from personal investigations by the land ranger attached to my party who has had many years experience in such matters.

As mentioned in previous progress reports concerning the portion of Gorham township and section east of Jacques township, the land in our opinion is very largely of no value and unsuitable for agricultural purposes, and the timber being almost entirely second growth—tamarac all dead—of very little value.

For mining purposes the land may eventually be in demand; some seven or eight mining claims at the north-east corner of Gorham township may possibly bring about the discovery of copper and gold values of commercial value. There is very little development work however in evidence at present.

When surveying Onion lake and Current river, I, at the suggestion of the Engineering and Utilities Departments of the city of Port Arthur, located the

shore line where it will be when the storage reservoir at Onion lake has been as planned, raised to the maximum of 20 feet above the present temporary level by the dam designed for the new site selected, about one and one-quarter miles south of the present combined dams. The new dam will give very much increased storage and have a high factor of safety. The cost of work so far in this municipal enterprise at Onion lake has been about $70,000.

The lands in Ware township are decidedly more inviting in character. According to the land ranger's report every lot contains more or less land adapted to agriculture as per list accompanying printed forms. The timber also is generally of useful dimensions.

In the unsurveyed portion north of Ware and south-east of Dog lake, one block of about eighteen square miles is estimated to contain nearly sixteen miles of agricultural land, the rocky ridges in some portions being very narrow and forming a very small percentage of the total area. Fair sized timber is also to be found in this locality—much of the spruce averaging from ten to fifteen inches in diameter. As shown on the plans and lists, we encountered a few instances where improvements had been made. On the western margin of this strip, at the north end of Little Dog lake a Hydro-Electric development plant is projected to utilize the magnificent fall of 350 feet between Dog and Little Dog lakes, which it is estimated will furnish an equivalent of the power produced by the Kaministiquia Power Company at the famous Kakabeka falls lower down the river. A Government reserve should be retained at this point as well as along the route of the proposed transmission line which has been located to Port Arthur.

Another water power exists at the Crooked rapids on the same river opposite concession VII, where a drop of fifteen feet occurs.

Fishing operations are being carried on at Dog lake, the catch being transported to headquarters at Port Arthur.

Game.

Very little game, such as moose, deer, bear, partridge and rabbit were seen, the rabbit being unusually scarce during the past season. Wolves were very much in evidence and on two occassions overthrew my transit, causing considerable damage and delay.

Roads.

Access to the Dog lake country during the summer is at present entirely by canoe. The bridges built by the former lumber companies having been swept away by spring freshets. This road can, however, be used in winter and by a comparatively small judicious expenditure could be very much improved as a summer route. The valley of Portage creek forms a natural route to the interior of a section otherwise not easily accessible. The only improvements noticed were a very fine log dwelling on the Kaministiquia river on the south boundary of concession VII, where other considerable improvements are under way. There was also a building occupied by two men near the narrows of One Island lake, probably for fishing and hunting purposes. The Finlanders who are the principal settlers in the outlying districts deserve credit for their energy and enterprise as pioneer settlers in a region which has small attraction for a less industrious class. When traversing the frontage of the Kaministiquia river across concession VIII, we carried the survey down across concession VII, where only a rough pacing traverse had here-

tofore been made. A traverse was also made connecting the triangulation points of the Trout lake survey on the boundary between Ware and Gorham township in concession VIII. On lot 1, concession VIII, Ware township, the settler Tarsti had built a house, unfinished, on what he believed to be the north half of the lot, but which our survey located on the south half.

In fractional lots it would be much fairer to the settler were the portion allotted described from a given point.

Observations were taken frequently and a check with O.L.S. Benner's work at the south-east angle of Jacques township tallied out, as regards both Azimuth and chainage, exactly with our own.

The disconnected nature of our work and the addition of land ranger (with an occasional assistant), also more than the average of wet weather have materially increased the estimated cost of a season's operations.

Should it be deemed advisable to lay out a township south-east of Dog lake a survey of the extensive lake shores could be more advantageously made on the ice during the winter.

Unforseen circumstances have delayed the sending in of my returns at an earlier date.

I have the honour to be, Sir,

Your obedient servant,

(Signed) A. L. Russell,

Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines.
Toronto, Ontario.

Appendix No. 21.

Survey of the Township of Colenso, District of Kenora.

Kenora, December 23rd, 1915.

Sir,—I have the honour to report that under instructions from your Department dated July 27th, 1915, I have surveyed the township of Colenso into farm lots and submit herewith my plans and field notes of the survey.

Timber.

This township is covered with growth of small jack pine, poplar, spruce, tamarac, birch and balsam. With the exception of a few trees of red pine on the shore of Rice lake, and a small quantity of scrub ash, elm and oak on the banks of the Wabigoon river, the better class of timber is entirely lacking.

On the hills and ridges the timber is for the most part short, scrubby jack pine, spruce and birch 3 in. to 8 in. in diameter; of no commercial value, being too

small for anything but cord wood, and too far away from railway stations for that to be of any value.

The flats and ravines have a larger growth of timber, principally poplar and spruce 3 in. to 16 in. in diameter, but are in such small quantity, and so badly scattered, that it is doubtful if there would be a larger quantity than needed to supply the settlers need.

The swamps have also a few spruce 3 in. to 16 in. in diameter, but for the most part the timber in the swamps is of a poor quality. The tamarac is of use for no other purpose than for fire wood, as ninety per cent. of it is dead and the balance dying.

On the rolling land where soil is clay or clay loam, jack pine and poplar are the principal timbers, and are for the most part short and scrubby but sound and run in size from 3 in. to 12 in. in diameter. The timber larger than 8 in. or 9 in. in diameter is scattered, and the jack pine would be of very little value for ties on account of its shortness and roughness.

On the sand and boulder lands the timber is principally jack pine and spruce, and is sound and smooth timber from 3 in. to 11 in. in diameter. There is such a small quantity of this class of timber and it is so badly scattered that it would be of very little commercial value.

On the banks of the Wabigoon river there is a small amount of elm, ash and oak timber 3 in. to 12 in. in diameter, but for the most part it is short and very scrubby and of very little value. More detailed information follows:

Con. I, Lots 1 *and* 2.

On the hills and ridges of those lots the timber is small jack pine, spruce, poplar and birch from 3 in. to 8 in. in diameter and suitable for no other purpose than cord wood. In the valleys there is a small quantity of scattered poplar and spruce from 4 in. to 10 in. in diameter.

Con. I, Lots 3 *and* 4.

The timber on the south and east parts of those lots is small jack pine, spruce, poplar and birch from 3 in. to 8 in. in diameter, on the north and west the timber is slightly larger, on this part of the lot there is a small amount of scattered jack pine large enough for ties.

Con. I, Lots 5 *and* 6.

Approaching Colenso creek the timber is of a better class. On the north half lot 6 there is a small bunch of fairly good spruce from 4 in. to 16 in. in diameter, but the amount is small. There is also some scattered jack pine, large enough for ties. The bulk of the timber is jack pine, poplar, spruce, tamarac and balsam 3 in. to 8 in. in diameter.

Con. I, Lots 7 *and* 8.

The timber on those lots is for the most part small jack pine, poplar, spruce, birch, tamarac and balsam 3 in. to 8 in. in diameter, with small quantity scattered jack pine and spruce up to 12 in. in diameter. On the north half lot 7 on the shore of Rice lake, there are a few red pine trees 14 in. to 18 in. in diameter.

Con. I, Lots 9 *and* 10.

On the south half of those lots there is a small quantity of scattered jack pine, poplar and spruce up to 14 in. in diameter. Bulk of the timber is spruce, jack pine, poplar, birch, tamarac and balsam 3 in. to 8 in. in diameter. North half of lots is mostly marsh and lake.

Con. I, Lots 11 *and* 12.

On the south part lot 11 there is a small amount of jack pine, poplar and spruce 3 in. to 11 in. in diameter. On north half lot 12 there is a small amount of jack pine, spruce and poplar 3 in. to 8 in. with few scattered jack pine up to 11 in. diameter. Those lots are mostly marsh and muskeg.

Con. II, Lots 1 *and* 2.

The timber on those lots is small, smooth jack pine, spruce, and poplar 3 in. to 9 in. in diameter. About thirty per cent. of those lots is an old brulé.

Con. II, Lots 3 *and* 4.

On those lots in the vicinity of Colenso creek there are some poplar and spruce up to 16 in. in diameter, and scattered over those lots is a small quantity of jack pine suitable for ties, and poplar and spruce large enough for pulp wood. The bulk of the timber is jack pine, spruce, poplar, tamarac and balsam 3 in. to 8 in. in diameter.

Con. II, Lots 5 *and* 6.

Those lots are covered with a growth of small jack pine, poplar, spruce, tamarac, birch and balsam 3 in. to 8 in. in diameter, with few scattered jack pine, poplar and spruce in the flats and ravines up to 11 in. in diameter.

Con. II, Lots 7 *and* 8.

The west part of those lots is almost entirely swamp with a very poor quality of spruce timber. On the south part of those lots, that is the part bordering on Rice lake, there is a fairly good bunch of spruce, jack pine and poplar 4 in. to 14 in. in diameter. On the remainder of those lots the timber is scrubby jack pine, poplar, spruce, birch and balsam 3 in. to 8 in. in diameter, with few scattered trees up to 12 in. in diameter.

Con. II, Lots 9 *and* 10.

Those lots have large amount of swamp and marsh with poor quality of spruce timber. On the clay land there is jack pine, spruce, poplar and balsam mostly of a small size, with few scattered trees of spruce and poplar up to 11 in. in diameter.

Con. II, Lots 11 *and* 12.

The timber on those lots is small scrub jack pine, poplar, spruce, balsam and tamarac 3 in. to 8 in. in diameter. There is a good deal of those lots marsh and muskeg, with no timber of any kind.

Con. III, Lots 1 *and* 2.

There is a great deal of swamp on the west part of those lots. Tamarac is mostly dry and the spruce is faulty and small. There are few scattered spruce around edges of swamps up to 14 in. in diameter. On the east part of lots the timber is jack pine, spruce, poplar, birch and balsam 3 in. to 8 in. in diameter.

Con. III, Lots 3 *and* 4.

On that part of those lots lying south and east of Mud lake, except along banks of Colenso creek, the timber is small jack pine, poplar, spruce, tamarac and balsam 3 in. to 8 in. in diameter. Along banks of Colenso creek and north and east of Mud lake, the timber is larger but scrubby, jack pine, poplar and spruce 3 in. to 12 in. in diameter.

Con. III, Lots 5 *and* 6.

On those lots there is a poplar flat of considerable extent with timber small, 3 in. to 7 in. in diameter. Balance of lots similar to that south of Mud lake.

Con. III, Lots 7 *and* 8.

With the exception of a very small amount of spruce timber in the flats and swamps up to 12 in. in diameter, those lots have very little else than scrub jack pine, spruce, poplar, tamarac and birch 3 in. to 7 in in diameter.

Con. III, Lots 9 *and* 10.

On south part of those lots there is a narrow strip of timber with some jack pine and spruce up to 11 in. diameter. On north part there is a small swamp with few spruce up to 16 in. diameter. Balance of lots is covered with scrub spruce, jack pine, poplar, birch and balsam 3 in. to 7 in. diameter.

Con. III, Lots 11 *and* 12.

Timber on those lots is small jack pine, poplar, spruce, tamarac, birch and balsam 3 in. to 8 in., not suitable for other purpose than cord wood.

Con. IV, Lots 1 *and* 2.

There is a good deal of swamp on those lots with poor quality of timber which is scrub spruce, poplar, jack pine, tamarac, birch and balsam 3 in. to 8 in. with very few scattered spruce up to 16 in. diameter.

Con. IV, Lots 3 *and* 4.

The north part of those lots is covered with scrub jack pine, spruce, tamarac, poplar, birch and balsam 3 in. to 8 in. diameter. On the south part the timber is a little larger, and has some jack pine and poplar scattered through it up to 11 in. in diameter.

Con. IV, Lots 5 and 6.

Those lots are covered with a small class of jack pine, poplar, spruce, birch, tamarac and balsam 3 in. to 8 in. diameter, with timber running a little larger toward the west side and in the flats where there are a few scattered trees up to 12 in. diameter.

Con. IV, Lots 7 and 8.

With the exception of small swamp which has a few spruce up to 16 in. diameter, those lots are similar to lots 5 and 6. Timber of the same quality and size.

Con. IV, Lots 9 and 10.

Timber on those lots is similar to that on the previous ones.

Con. IV, Lots 11 and 12.

The north part of those lots has a good deal of swamp with dead tamarac and some spruce up to 14 in. in diameter, balance of lots is covered with fairly good class of jack pine, poplar, spruce and birch 3 in. to 10 in. diameter.

Con. V, Lots 1 and 2.

The south-east part of those lots is covered with scrub spruce, poplar, birch, tamarac and balsam 3 in. to 8 in., of no commercial value. Balance of lots is marshes or lakes.

Con. V, Lots 3 and 4.

The north-east part of those lots has a spruce swamp with few spruce up to 12 in. diameter. Balance of lots is covered with jack pine, spruce, poplar and birch 3 in. to 8 in. in diameter.

Con. V, Lots 5 and 6.

The south-west part of those lots has some scattered spruce and jack pine timber up to 12 in. diameter, and south of Chanley lake there is a small bunch of jack pine timber suitable for ties 6 in. to 14 in. diameter. Balance of lot jack pine, spruce, poplar, birch, tamarac and balsam 3 in. to 8 in.

Con. V, Lots 7 and 8.

In the flats on those lots there are some poplar and spruce up to 16 in. diameter. Balance of lots are covered with jack pine, poplar, spruce, tamarac and balsam 3 in. to 9 in.

Con. V, Lots 9 and 10.

Along the flats and ravines in those lots there is some scattered timber up to 12 in. diameter suitable for ties or pulpwood. Balance of lots jack pine, poplar, spruce, and birch 3 in. to 8 in. diameter.

Con. V, Lots 11 *and* 12.

The timber on those lots is jack pine, poplar and spruce 3 in. to 8 in. in the flats and on the clay land, on the rock hills it is scrub timber 3 in. to 6 in. of no value.

Con. VI, Lots 1 *and* 2.

On the south-east part of those lots there is on the ridges a good quality of spruce and jack pine timber 3 in. to 12 in. in diameter. Balance of lots is either scrub timber 3 in. to 6 in. in diameter or brulé.

Con. VI, Lots 3 *and* 4.

A small portion only of those lots is covered by green timber, balance is brulé. Where timber is green it it small jack pine, spruce, poplar, birch and balsam 3 in. to 7 in. in diameter.

Con. VI, Lots 5 *and* 6.

Similar to above.

Con. VI, Lots 7 *and* 8.

Similar to above, excepting that green timber is little larger, 3 in. to 10 in. diameter.

Con. VI, Lots 9 *and* 10.

South part of lots jack pine, poplar, spruce, birch and balsam 3 in. to 10 in. Some spruce and poplar in swamp on north side to 14 in. Balance scrub timber 3 in. to 6 in. or brulé.

Con. VI, Lots 11 *and* 12.

North part of lots is brulé, balance jack pine, poplar, spruce, birch and balsam 3 in. to 11 in. diameter.

Soil.

In the township of Colenso on the rolling land the soil is for the most part a white clay loam. This soil is very similar to that of the township of Wabigoon to the west and Mutrie to the south, and has been shown to be, with proper cultivation, a good class of agricultural land.

The soil in the valleys and on the level ground is mostly a white soft clay covered with muck 4 in. to 6 in. in depth.

Along Colenso creek there is a good deal of level and low rolling land of a good quality of clay and clay loam. In places along this creek there is a considerable amount of good hay land 6 ft. to 8 ft. above the creek.

Along the Wabigoon river there is a considerable amount of marsh on some of which there is a considerable amount of hay growing. But for the most part those marshes are useless with the present water level of the Wabigoon river.

There is a large amount of swamp land on lots 1 and 2, concessions IV and V; lots 8 and 9, concessions II and III; lots 2 and 3, concession III; lots 10 and 11, concessions I and II; those swamps are very wet.

In concession VI there is a very small percentage of good land, lots 2 and 3 and 8 and 9 are the only ones with large amounts of good clay land, the others have a considerable quantity of rock and sand.

In concession I, lots 1, 2 and 3 have very little land suitable for agricultural purposes, being principally lake and rock.

With the exception of those places mentioned above every lot has a considerable amount of good agricultural land, principally clay loam.

There is on some of the lots a small amount of sand and gravel, especially on lots 6 and 7, concession V, and lots 9, 10, 11, concession IV, with the exception of those places we saw very little sand.

Rock.

On concession I, lots 8, 9, 10, 11 and 12, in the township of Colenso, the rock formation is an altered trap rock. On all other parts of the township the rock is either granite or granitoid gneiss, showing no sign of mineral.

On concession VI the rock hills are rolling and continuous, in some parts attaining a height of 100 feet.

Lots 1, 2 and 3 in the 1st concession are, with the exception of Lake George, almost entirely rock.

In other parts of the township rock hills and ridges are numerous but are for the most part rolling and do not appear to be either long or wide.

The slopes of a number of those hills are rock, but on top there is a good quality of soil.

The main hills run in a north-east and south-westerly direction. The township of Colenso is fairly well watered. There are thirteen lakes, one river and numerous creeks within its borders.

(1) Lake George, concession I, lot 1, is a good clear water lake, apparently a spring lake of good depth. On the north side there is a small sand and gravel beach, balance of lake has rocky shore.

(2) Johnson lake, concessions V and VI, lots 1 and 2, is a shallow highly coloured lake and is almost entirely surrounded by hay marshes; not suitable for summer resort.

(3) Rice lake, concessions I and II, lots 7, 8 and 9, is a lake on a level with the Wabigoon river, from which it is separated by a narrows two chains in width and some five chains long. The water is slightly coloured on account of the large beds of wild rice. There being a very small portion of the lake only in which rice does not grow. It has a depth of from 1 ft. to 10 ft. and is not suitable for summer resort.

(4) Mud lake, concession III, lots 4 and 5, is a highly coloured muskeg lake, entirely surrounded by marshes; is very shallow, 18 inches in depth with a very soft bottom. When Colenso creek is high the water flows from it into this lake. Not suitable for summer resort.

(5) Chanley lake, concessions V and VI, lots 5 and 6, is a shallow, clear water lake. On the north-west and east sides the shores are marshy, balance of lake has sand or rocky shores.

(6) Leo lake, concession VI, lots 9 and 10, is a slightly coloured lake at present flooded by beaver dams. South shore and forty per cent. of north shore are rocky, balance of shore is marsh and drowned land. Not suitable for summer resort.

(7) Louis lake, concessions V and VI, lot 11, is a highly coloured lake, flooded by beaver dams. West shore of lake is rocky, balance drowned land and marsh. Not suitable for summer resort.

(8) Final lake, concession II, lots 9 and 10, a small, highly coloured, shallow lake, entirely surrounded by marshes. Not suitable for summer resort.

(9) Cliff lake, concession I, lots 2 and 3, a small lake with slightly coloured water, with high hills on north and south sides. Not suitable for summer resort; water shallow.

(10) Bog lake, concession IV, lot 1, east boundary, a small highly coloured lake, surrounded by marshes, not suitable for summer resort, water shallow.

(11) Boundary lake, concession VI, lot 9, north boundary, a small muskeg lake entirely surrounded by marsh and drowned land. Water is highly coloured and shallow. Not suitable for summer resort.

(12) Favel lake, concession I, lots 11 and 12, water is highly coloured and shallow, and the part on township of Colenso, excepting a very small amount on the north-west corner is entirely surrounded by marshes. Not suitable for summer resort.

(13) Meadow lake, concessions I and II, lot 10, a small, highly coloured lake surrounded by marsh. Water flows into this lake from the Wabigoon river during high water.

Rivers.

In its course through the township of Colenso the Wabigoon river is a slow flowing stream 3 chains to 5 chains in width, and for the greater part of the way flows through a marshy country; in such places there is a narrow clay bank along each side of the stream. The water is slightly muddy and from 10 ft. to 20 ft. in depth. All of the creeks from Colenso Township eventually find their way to this river. The water is slightly contaminated from the Dryden Pulp Mill.

Colenso Creek.

The source of this creek is Rosamond lake, 7 miles east of Morgan station on the G.T.P. Railway and enters the township of Colenso from the east in concession III. With the exception of a short distance in lots 8 and 9 it flows through this township until emptying into the Wabigoon river. It is from 50 to 75 links in width according to the seasons of high or low water. The water is good but slightly muddy on account of the beavers continually working in it. There are a number of beaver dams which control depth of water. There are also a few rapids which have very little drop and a very small quantity of water flowing over them, except after heavy rain storms.

Long Lake Creek.

The source of this creek is Long lake on north side G.T.P. Railway east of Morgan station. It enters Colenso township from the north in lot 6, concession VI, and leaves township in lot 12, concession IV. This creek has highly coloured water

and is from 15 to 25 links in width. It has few rapids with very little water coming over them. It has numerous beaver houses and dams, which make a considerable amount of flooded land. Its depth is from 2 ft. to 4 ft.

There are a number of other small creeks throughout the township which are sufficiently large to warrant settlers a constant supply of water for household and barns. Some of those creeks are apparently from springs as the water is both clear and cold.

Water Powers.

There are none in the township.

Navigation.

The Wabigoon river is sufficiently large and deep to be navigable for small steam boats or craft of other kind. Colenso creek is navigable for canoes for its full distance across the township. There are a few short portages but the greatest obstacle is the large amount of driftwood caused by beavers.

Islands.

On the Wabigoon river in concession I, lot 10, there are two small islands. No. 1 is a low level island with marshy shores. No. 2 is merely rock with a few trees growing on it; not suitable for summer resort. On Favel lake there is one low rocky island not suitable for summer resort. On Johnson lake there is one small island, low and rocky, not suitable for summer resort. On Rice lake there is one small rocky island. It has few trees growing on it, but it is not suitable for summer resort.

Roads.

Throughout the township of Colenso there are numerous roads branching from one of two main roads. One of those main roads commences at Vermilion bay, township of Langton, and has a floating bridge strung on cables across the Wabigoon river. The other main road commences at Waldorf siding in the township of Mutrie; there is no bridge across the Wabigoon river on this road. Both of those roads go to an old G.T.P. construction camp one mile west of Morgan station on the G. T. P. Railway.

With the exception of concession VI roads can be easily made as the land in most places is fairly level and has very few steep hills.

Fish.

In the Wabigoon river, pike, pickerel, gold eyes and suckers are plentiful. Colenso creek has some pike. Of the other lakes we had no way of ascertaining what fish are in them.

ANIMALS.

Of the larger animals moose are plentiful along the east and north parts of the township, while along the streams and swamps deer are abundant. Of the smaller animals beaver and wolves are the most numerous and are very plentiful. There are also mink, skunk, fisher and fox.

I have the honour to be, Sir,

Your obedient servant,

(Signed) EDMUND SEAGER,

Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 22.

SURVEY OF AN ADDITION TO THE TOWNSHIP OF NEPIGON, DISTRICT OF THUNDER BAY.

NIPIGON, ONT., June 15th, 1916.

SIR,—I beg to submit herewith a report on the survey of an addition to the township of Nepigon in the district of Thunder Bay, surveyed by me under instructions from the Department of Lands and Forests dated Toronto, March 21st, 1916. This survey consisted of the addition of four concessions to the old township of Nepigon, numbered VI, VII, VIII and IX, with sixteen lots in each concession. This addition is bounded on the south by the township of Lyon, on the north by the township of Booth and on the west by unsurveyed lands.

Pursuant to instructions, I commenced my survey at a post planted by O.L.S., Scott to mark the northwest angle of lot 14 in the 5th concession. From that point I ran my side line between lots 14 and 15 west astronomically 4 miles, planting a post at the end of each mile. From the several mile posts on that side line I ran my concession lines south astronomically to intersect the north boundary of the township of Lyon, and north astronomically to intersect the south boundary of the township of Booth—with the exception that I ran the west boundary of Nepigon township north and south astronomically from the side line between lots 12 and 13, rather than from the line between lots 14 and 15, this having been found to be the more accurate and practicable method on the ground.

I ran the side lines in these concessions between lots 12 and 13, 10 and 11, 8 and 9, 6 and 7, 4 and 5 and 2 and 3 west astronomically from the posts planted by O.L.S. Scott on the west boundary of concession V, or from points on said boundary re-established by me. With regard to the said west boundary of concession V—this line had been run in 1873. But three of the original posts could be found, one of these being a half mile post, this having undoubtedly been planted in error for it was planted where no post should have been planted and was then incorrectly marked as well. I re-ran the entire length of this boundary. Settlers had taken up the lots in

concession V and had blazed lines and trails sometimes on two, sometimes on three sides of the trees. Without running the line with the transit it was impossible to determine with any degree of accuracy the location of the line. This line has therefore been run, blazed correctly and posted according to the Survey Act. As stated above, from points on this line re-established by me, I ran my side lines between the lots west astronomically to intersect the west boundary of the township as run by me.

In pursuance with my instructions, I planted substantial wooden posts, in almost every case of spruce, to mark the angles of the lots. All posts were accurately planted on the lines of survey. Bearing trees were taken in accordance with the instructions and mounds of stones placed about the posts where necessary.

Alongside the wooden posts, at the points noted in my field notes, I planted iron posts marked similar to the wooden posts, alongside which same were planted. In several instances it was found that it was impossible to plant said iron posts due to the granite. I then had the iron post planted at a different point from that as indicated on the projected plan sent me, careful note having been made of such cases. In all cases the posts were correctly marked with the scribe this having been impressed upon the chainmen with great care.

I made a traverse survey of the Black Sturgeon river pursuant to instructions and beg to enclose plan and notes of same. I have noted in these notes and on the plan where the rapids are located and the portages. I have made no reservations to the Crown along this river. At the time this survey was made, the river was at its highest. From inquiries made here I find that for the greater part of the year the river is very low, barely covering the rocks so it is said. There was some 15 feet of water when I made my traverse. There were no islands in the river through the section of it traversed by me. I have divided my traverse into three sections, as indicated on notes for the same. I used the method of continuous bearings for the traverse, commencing at a side line and carrying out the work as stated above, in three sections. This will be quite clear from the plan and notes. The stadia was used throughout the survey, except in cases where the lines of the survey intersected the river, when the distance was obtained with a four chain tape.

I beg to state that I found it necessary to re-run the north boundary of the township of Lyon. This line was run originally in 1878. It had been very poorly blazed evidently and also it would appear that there was little timber of any size there at the time said line was run. No posts were found on this line except at the southeast corner of this addition surveyed by me. Here I found an old post lying on the ground, rotten. I therefore re-ran this line, blazed it correctly and posted it where my survey lines between the several concessions intersected it.

I made a separate traverse of each lake met with in the survey of this addition. These traverses were made with the stadia. I beg to enclose plan of said traverses and field notes of same. In each case these traverses have been connected with some known point on one of my survey lines. Said lakes, as well as the Black Sturgeon river, have also been plotted on my final plan and upon my timber plan. I have marked on each lake the area of same and in computing the areas of the lots in the different concessions I have subtracted the area of the lake, lakes, or river in said lot.

I beg to state that my lines were well cut out and well blazed, particular care having been taken with regard to the blazing, knowing as I do, the importance placed by the Department upon this matter. Astronomical observations were taken on the west boundary of concession V before commencing the lines which I ran westward between the lots. Finding that my lines were checking well for distance and angles of intersection throughout the survey I did not take further observations through the

township. A glance at the plan and field notes will show that the lines checked well. As will be noticed from the plan lot 1 is very narrow, due to errors in the previous survey of the township of Nepigon, and the same may be said of concession VI.

Timber.

As shown by the field notes and by the timber plan, this township addition is very well timbered. It will be unnecessary to go greatly into detail further than to state that the entire township is thickly timbered with spruce which varies from 6 to 20 inches in diameter, an average being about 8 inches. In many of the lots, this is found in large quantities. I might say that the whole central and southeasterly parts of the township are particularly well covered with this spruce. Birch is also found in considerable quantities, this being very large. There are great quantities of it at about 20 inches. The balsam runs large but it is not in such large quantities as either the birch or the spruce. There is little poplar, some large cedar which is for the greater part rotten. Some good cedar is to be found near the creeks noted in the field notes. Scattered white pine was found in running the lines but this was not in large quantities. Almost every lot contained some, I would say that there were about 35 of these to a lot, varying from 24 to 40 inches in diameter. Further comment of the timber is rendered unnecessary by the inclusion of the timber plan in my notes and my field notes which I believe will be found to be rather complete with regard to notes on the timber and soil.

Soil.

In making this survey I impressed upon the chainmen the necessity of noting carefully the soil, and this, I believe, has been done with all reasonable care. From a glance at my timber plan it will be seen that for the greater part this township is rocky, this rock being granite. Here I might say that no economic minerals were met with on this survey.

I have made a note of the following lots which were found to contain good soil, this being a clay loam—In concession VI, lots 2, 3, 4, 5, 6 and 7; in concession VII, lots 1, 2, 3, 4, 5 and 7; in concession VIII, lots 1, 2, 3, 4 and 5; in concession IX, lots 2, 3, 4, 5, 6. These lots for practically their entire acreage have good soil. This does not condemn many of the other lots in the several concessions, for in the valleys it was found that there was good soil. My survey lines, as is often the case, ran through the roughest and hilliest of the country in the township. In the valleys my men found good soil. This was not shallow, but had up to three and four ft. depth over the granite. But I would draw particular attention to the lots I have named above as being undoubtedly the best in this addition. But, as stated, many of the adjoining lots will be found to have from 30 to 70 per cent. of good soil. I regret that I was unable to cover personally more of the area contained in these lots. Along the Black Sturgeon river for the distance traversed by me, I found low, flat banks of good clay soil, this having considerable depth. A glance at the field notes will show some hills and many sheer drops of great height. The heights of these have not been at all exaggerated, as would appear possible. I checked with the transit by vertical readings several of these and found that my chainmen had in several instances under, rather than over, estimated the heights.

Most of the lakes encountered were from 6 to 15 feet in depth and contained some trout. The Black Sturgeon river is also a good trout stream, although at the time I made this survey, it was fairly alive with large suckers. The water in the lakes was quite clear, good drinking water.

I enclose with this report my account for said survey, I computed the river distance from my traverse of same. I also beg to submit herewith my final plan, field notes, timber plan, affidavits, etc. May I add that in this survey I met with two settlers in this addition. I enclose statement with regard to their improvements. Mr. Lawrence is upon the east half of lot 2 in concession VII and Mr. Miller upon the east half of lot 3 in concession VII. These men inform me that they are going to make application for these lots. Both of these men worked for me upon this survey. I believe they will make good settlers and I beg to suggest that their applications for these lots will receive consideration first, at the time the said lots are placed on sale, if that is the intention of the Department with regard to the lots in this addition.

I trust that this report, the plan and field notes will be found quite satisfactory.

I have the honour to be, Sir.

Your obedient servant,

(Signed) M. E. Crouch,

Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 23.

Survey of the Township of Hele, in the District of Thunder Bay.

Nipigon, Ont., August 26th, 1916.

Sir,—I beg to submit herewith a detailed report on the survey of the township of Hele in the district of Thunder Bay, surveyed by me under instructions dated July 4th, 1916.

The township of Hele may be reached by taking a road from the town of Nipigon to the east boundary of the recently surveyed addition to the township of Nepigon; thence across said addition a distance of four miles, the west boundary of this addition being the east boundary of the township of Hele. Or, this township may be reached by taking the C.P.R. west from the town of Nipigon a distance of about 12 miles to the Black Sturgeon river, thence up the river across the southwest corner of the addition to Nepigon township, the river crossing the east boundary of Hele township in the third mile from the south boundary. This latter route is the one used by me in transporting my supplies in for the survey. There are few portages and there is sufficient depth to the river to make this a most convenient method of reaching the township.

The township of Hele is eight miles long in a north and south direction, six miles wide in an east and west direction. It consists of six concessions, numbered from east to west, with sixteen lots in each concession, numbered from south to north.

It is bounded on the east by the recently-surveyed addition to the township

of Nepigon, on the north and west by unsurveyed land, on the south concessions X and XI of the township of Lyon lie south of concessions I and II of Hele, and concessions I, II, III, IV of Stirling township lie south of concessions III, IV, V, VI of Hele. The township of Booth lies to the northeast of Hele township.

Pursuant to instructions, I commenced my survey at the southwest angle of the addition to the township of Nepigon recently surveyed by me. I chained westerly along the north limit of Lyon township and Stirling township a distance of six miles, planting posts at the end of each mile. From said posts I ran my lines between the several concessions north astronomically to intersect the north limit of Hele, as subsequently surveyed by me. I commenced at the southwest angle of the addition to the township of Nepigon and chained northerly along the westerly limit of said addition a distance of eight miles (see notes) planting posts at the end of each mile, also at the half miles as per instructions. From the mile posts thus planted I ran my lines between the alternate lots west astronomically to intersect the westerly limit of Hele township, as subsequently surveyed by me. In every case the jogs between the posts planted by me and posts planted on the boundaries of Lyon, Stirling, Booth and Nepigon townships, were carefully noted.

I beg to state that particular attention was paid to the correct marking and planting of all posts, these conforming with the requirements of my instructions. Iron posts were planted alongside the wooden posts at the points indicated on the projected plan accompanying my instructions. Bearing trees were noted in all but a very few instances.

The lines are blazed according to instructions. Exceptional care was taken with this, one man devoting his entire time to this work. This was done in view of the importance which I know is placed by your Inspector upon this part of the work. My chainmen were experienced men. Their work was carefully and, to the best of my knowledge, accurately done. Throughout the survey of this township, your instructions have been closely adhered to.

The Black Sturgeon river crosses this township, flowing in a general southeasterly direction. This river, as well as all lakes in the township, I carefully traversed and have plotted same upon a scale of ten chains to the inch. These traverses with the notes on the same, accompany this report.

The soil and the timber in this township were most carefully noted. This work was not left to the chainmen, but was done by my transit man and myself.

Soil.

As will be noted from my timber plan, a very considerable amount of the soil in this township is clay. This is a white clay, not the red clay found in the vicinity of the town of Nipigon. It is for the most part similar to the soil found in York County. Practically all of concessions IV, V, VI lie in this clay belt, also the entire valley of the Black Sturgeon river. In concessions I, II, III, it will be seen from my field notes, that there is clay soil to be found. This is the same as that found to the west, glacial deposit, but through this, there are to be found ridges of sand. Along the Black Sturgeon river, through concessions I, II, III, there are sheer cliffs on either side of the river, varying in height from 150 to 400 ft. These completely run out on the south side of the river in concession III. On the north side of the river the cliffs reach their highest point in the easterly part of concession III. From this point they gradually diminish in height to the west. These cliffs are of granite. At some places through the lots, both north and south

of the river, there are outcroppings of this same granitic formation. The following lots I consider to consist entirely of very excellent soil:—

Concession I, lots 5,
Concession II, lots 8, 9, 13.
Concession III, lots 9.
Concession IV, lots 3, 4, 10.
Concession V, lots 2, 3, 4, 11, 12.
Concession VI, lots 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.

The following lots contain good soil but not of the same quality as found in those mentioned above; in some there may be found outcroppings of granite:—

Concession I, lots 4, 10, 12, 16.
Concession II, lots 2, 3, 4, 7, 10, 11, 12, 15.
Concession III, lots 1, 2, 3, 4, 5, 6, 10, 11, 16.
Concession IV, lots 1, 2, 5, 6, 7 11.
Concession V lots 1, 5, 6, 7, 8, 9, 10, 13,
Concession VI, lot 1.

The following lots contain very poor soil and I consider them to be worthless from an agricultural standpoint:—

Concession I, lots 1, 2, 3, 6, 7, 8, 9, 11, 13, 14, 15.
Concession II, lots 1, 5, 6, 14, 16.
Concession III, lots 7, 8, 12, 13, 14, 15.
Concession IV, lots 8, 9, 12, 13, 14, 15, 16.
Concession V, lots 14, 15, 16.
Concesssion VI, lots none.

It should be borne in mind that this report on lots is based upon the actual survey lines, not upon a thorough covering of the land throughout the entire lot. In concluding my remarks upon the soil in this township, I would say that at least sixty-five per cent of the soil met with is a clay, or light sandy loam, a very high percentage for the district. It will be noted from this result of the actual survey that it fully bears out the reports made to me by my men when investigating this country preliminary to the writing of the report which I submitted for your approval some time previous to the issuing of instructions for the survey.

Timber.

Hele township is very well timbered. There is little pine to be found, some few being encountered scattered throughout the township. The westerly half of the township, concessions IV, V and VI, is well timbered with excellent spruce running from 4 to 15 inches in diameter. There are quantities of this at an average of 10 inches. Some birch, balsam and cedar, running from 6 to 15 inches in diameter were met with in the westerly part of the township, but for the greater part there is practically nothing but the spruce as mentioned above.

In the easterly half of the township, spruce, birch and balsam from 3 to 15 inches were found—there being more of the birch and balsam here than in the westerly half, the spruce not being found in such quantities as in the westerly

half. Through the entire valley of the Black Sturgeon river good spruce was met with, both as regards quantity and quality. Excellent piling could be secured here to meet demands, now most urgent, for this in the cities of Port Arthur and Fort William—but some little difficulty would be encountered in getting this out, most of my men believing that the river would give trouble in handling of piling over 45 ft. in length. This belt of good spruce extends approximately a half mile on each side of the river. Some banksian pine is found along the hills bordering the river, this pine running from 3 to 10 inches in diameter. Throughout the township, some poplar is to be found, this for the greater part being small in size. In concluding these remarks on the timber, I would state that I have not seen a township much better timbered than Hele. The spruce is large, it is found in liberal quantities. I beg to refer you to my timber plan for details as to the timber in the several separate lots. You will note that the better timber is to be found on the land best adapted for farming.

Game.

Moose and red deer are very plentiful in this township. In the river are to be found pike and black bass, no trout. The pike run to a large size.

Lakes.

The lakes met with in the survey of this township were of clear, cold water, fed by small streams from the hills. For the most part the banks are rocky. No fish were to be found in the lakes.

Roads.

There are, of course, no roads in this township. It is easily accessible, however, from Nipigon by roads through Nepigon township and from Hurkett on the C.P.R. by trails and roads through Stirling township. With the exception of the lots bordering the Black Sturgeon river, the greater number of the lots could be reached by roads following the several concessions and lot lines of the survey. In most parts of the township these could be easily built at a comparatively small cost.

In conclusion I beg to state that throughout the survey of this township I have carefully followed my instructions with regard to the same. I have put special attention upon the soil and timber, and I believe my notes will fully cover all the lots as regards these details. I beg to enclose herewith plan and field notes, traverse plans and notes of the Black Sturgeon river and lakes. Trusting that my work and the report upon the same, may be found to be satisfactory,

I have the honour to be, Sir,

Your obedient servant,

(Signed) M. E. Crouch,

Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ont.

Appendix No. 24.

SURVEY OF THE TOWN PLOT OF GRANT, IN THE DISTRICT OF THUNDER BAY.

NORTH BAY, ONTARIO, September 8th, 1916.

SIR,—Herewith we beg to report the completion of the survey of the townsite of Grant, on the National Transcontinental Railway, and in the district of Thunder Bay, performed under instructions from your department bearing date of May 31st, 1916.

Grant is a divisional point on the National Transcontinental Railway, 254 miles west of Cochrane, and promises to become a very important railway point. Even at the present time, the railway there undertakes repairs of a fairly heavy order; and, as the shops there are designed for heavy order work, the added population will be a natural result to the traffic acceleration. To the townsite there is tributary a very large area of first-class arable land of the usual spruce-timbered, moss-covered, clay loam type. The future, therefore, of Grant from an agricultural viewpoint, appears to be very bright.

The townsite is quite level, but with a good natural drainage to the north. The best drained lots, at the present time are in the row fronting the track and running from Second avenue east; and in the second and third rows of lots on the curve. The balance of the townsite, while wet at the present time, will be quite dry when the spruce bush is cut down and the moss capping burned off.

All four angles of each lot were staked, all stakes being of spruce and squared 3 inches or better on the face, and well driven home. On these posts were marked with black paint the numbers of the adjoining lots or streets. At certain block corners, iron stakes were planted and these were similarly marked with a cold chisel.

First avenue was made to coincide with the sewer which at present runs about three-quarters of a mile north from the track to empty into a small lake. Except between First and Second avenues the townsite is four lots deep, each of 132 feet depth. All regular lots are 66 feet in width, the irregular widths occuring at First avenue, Fourth avenue, and on the curved portions of the townsite.

There are already certain private buildings on the townsite, and these are all laid down on the plan and detailed in the list of lots.

The field work was commenced on the 31st of July and completed on the 12th of August.

Accompanying this report are a plan of the townsite on a scale of 200 feet to an inch, a list of all the lots, and the customary returns consisting of pay roll, vouchers, etc., etc.

All of which is respectfully submitted.

We have the honour to be, Sir,

Your obedient servants,

(Signed) McAUSLAN & ANDERSON.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 25.

SURVEY OF THE TOWNSHIP OF CODY, DISTRICT OF TIMISKAMING.

January 14th, 1916.

SIR,—In accordance with instructions to Ontario Land Surveyor, C. H, Fullerton, to sub-divide the township of Cody, district of Timiskaming, bearing date of July 9th, 1915, which instructions have been transferred to me by your letter of November 29th, 1915, I have to report as follows:—

The instructions have been carried out to the letter with the exception of the lines between concessions II and III, the line between concessions III and IV and the line between concessions V and VI. These lines were run west to the west boundary of the township of Cody from points in the north and south line between lots 10 and 11. In the first case the error was 13½ links south of the 122nd mile post; in the last two lines between concessions III and IV, and V and VI, the error was 11 links, each line hitting south of mile-post 123 and 125. The reason of the survey being made in this manner was to save time, and Mr. Fullerton, who delivered me the instructions informed me that he had arranged this with your department in Toronto.

The lines were all run with a transit and well cut out and blazed. Every care was taken to make the survey accurate. In every instance posts were planted in the best possible manner and bearing trees were taken at all points with the exception of the road posts at the intersection of the line between concessions V and VI with the Porcupine river, the intersection of the line between concessions II and III, I and II, and the line between lots 8 and 9 with the westerly water's edge of Night Hawk lake. These points were all in muskeg or swampy ground and bearing trees were not within reasonable distance.

TIMBER.

The southerly part of the township of Cody up to within 10 chains more or less of the line between concessions IV and V, has been burned over and the timber is, therefore, of no value. The fire has not gone through and burned the ground clean, but has left the bush in a very bad condition as the timber now is mostly all windfall. The line between concessions IV and V is all in green timber, and north of the line none of the timber has been destroyed by fire. The timber consists, in this part of the township, of spruce, balsam, birch and popular with practically no jack pine. The spruce is most predominant and is from 4 to 16 inches in size, the largest percentage of it being of pulp wood size. Balsam comes next in quantity and runs from 4 to 14 inches in size. The birch and poplar are both fairly abundant and run from 6 to 16 inches.

SOIL.

The soil of the whole township, with the exception of lot 8 in concessions I, II, III and IV, which are very swampy, and a few outcroppings of rock, is a very good clay loam suitable for agriculture.

Minerals.

There is an outcrop of diabase on a line between lots 10 and 11, concession III, and also on a line between concessions III and IV, on lot 11. Above this line, on the line between lots 10 and 11, concession IV, there is an outcropping of Keewatin schist. There were no other outcroppings south of this and none north with the exception of the peninsula on the northerly end of Night Hawk lake. It would appear that the northerly portion of the township is of Keewatin schist in formation, and the southerly portion of diabase.

Lakes.

The interior lakes of the township of Cody consist of one small lake in lot 7, concession VI, which is very nearly round and about ¼ mile across. This appears to be a spring lake as the water is very clear.

Together with this report I am forwarding you the field notes of the township of Cody, a timber plan showing area of the valuable timber, and a plan of the survey.

Trusting that you will find the above plans accurate and suitable,

I have the honour to be, Sir,

Your obedient servant,

(Signed) T. G. Code.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 26.

Survey of the Town Plot of Armstrong, in the District of Thunder Bay.

North Bay, Ontario, September 8th, 1916.

Sir,—Herewith we beg to report the completion of the survey of the townsite of Armstrong, on the National Transcontinental Railway, and in the district of Thunder Bay, performed under instructions from your Department bearing date of May 31st, 1916.

The townsite lies in a territory very much broken up with fish-bearing waters, and with a soil of a very sandy character. The agricultural possibilities, therefore, of the surrounding country are not so extensive as at all the other divisional points on this railway in Ontario and east from this point.

The four angles of each lot were all staked, the corner stakes being made three inches or better on the face, and well driven home. On each stake the number of the adjoining lots or streets were marked with black paint. Iron posts were planted at certain block corners as noted on the plan, and these were similarly marked with a cold chisel.

The townsite, being very rolling and with a sandy soil, has, therefore, a very excellent natural drainage. The station buildings, at the present time, empty their raw sewage into the right-of-way ditch, into which also flows the creek that traverses lots 22, 66, 101, 102, 141, 142, and 181.

There are at the present time numerous private buildings on the townsite; these are all shown on the plan and listed in detail on the list of lots.

The field work was commenced on the 13th of August and completed on the 29th of August.

Accompanying this report are a plan of the townsite on a scale of 200 feet to an inch, a list of all lots, together with the customary returns consisting of pay roll, vouchers, etc.

All of which is respectfully submitted.

We have the honour to be, Sir,

Your obedient servants,

(Signed) McAuslan and Anderson.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 27.

Survey of Part of the Township of Cavell, District of Sudbury.

Peterborough, Ontario, March 22nd, 1916.

Sir,—I have the honour to submit herewith the field notes and plans of the survey of part of the township of Cavell, in the district of Sudbury, performed by me under instructions from your Department dated October 23rd, 1915.

As instructed I commenced the survey at the intersection of the Meridian line run by O.L.S. Stewart in 1891 and the southerly limit of the original right-of-way of the Canadian Pacific Railway. Here I found a mound of small stones, the iron and wooden posts having both disappeared; from this point I retraced O.L.S. Stewart's Meridian to the south-east angle of the township, at which point I found the iron post planted by him in 1891. Having secured a satisfactory observation for azimuth at this point, I ran the front of concession I due west astronomically two miles making lots 1, 2, 3 and 4 each 40 chains in width, and from the points thus established I ran the side lines between lots 2 and 3 and 4 and 5 north astronomically to the north limit of concession IV. The lines for the fronts of concessions II, III, IV and V were run due west astronomically from points established on O.L.S. Stewart's Meridian and the northerly production thereof.

That portion of the township surveyed by me comprises an area of 5,122.24 acres and may be described, as a whole, as gently undulating in character. It has been swept over many times by fire so that with the exception of that in the swamps little of the original timber now remains, the second or present growth being made up, for the most part, of small poplar, birch, alder, willow and some jack pine, now generally known as brulé. I would consider fully sixty per cent. of that portion of the township subdivided by me very fair farming land, being a clay or

sandy clay loam fairly free from stone and from eight to twelve inches in depth resting on a gravel subsoil. This land may now be very easily cleared and I feel quite sure that if its location and accessibility were generally known it would be very quickly taken up and settled upon.

The swamps which make up probably fifteen to twenty per cent. of the total land area present the usual characteristics, in some places soft and peaty, at others of a firmer consistency, especially where found resting on a clay or gravel sub-soil. There are, of course, as is common to nearly all this section of Northern Ontario, low rocky bluffs and ridges, but the proportion of good arable land in this immediate locality I believe to be far above the average found in this section of Ontario.

This tract is well watered by numerous lakes, creeks and ponds all of which contain beautiful clear palatable water. The Canadian Pacific Railway's Transcontinental line crosses the 3rd and 4th concessions, through lots 1, 2, 3 and 4, in this division it is a double track system and neither time nor money seems to have been spared in making the roadbed as nearly perfect as possible.

A good wagon road leading to the Shannon limits on the Spanish river waters extends southerly through the easterly section of township and is well located for the purpose of colonization. There is at present but one settler in that part of the township subdivided by me, viz.: George Boucher, who is settled on the west part of lot 1, in the 3rd concession, he has about seven acres cleared, good comfortable house and outbuildings, has several head of cattle, hogs, hens, etc., and altogether is very happily and comfortably situated.

Considering the adaptability and accessibility of this district for settlement I would respectfully suggest to your Department the advisability of extending this survey and opening up that part of the country for settlement as soon as possible. A round iron post one and one-quarter inches in diameter and three feet long furnished to me by your Department is planted at the intersection of side line between lots 4 and 5 and the line in front of concession V, this post is marked "Con. V" on the north side, "Con. IV" on the south side, "Lot V" on the west side and "Lot IV" on the east side, it has also the name "Cavell" marked on the south-east side. At all other intersections of side lines and concession lines surveyed by me are planted solid iron posts seven-eighths inches square and two feet six inches long. These posts are planted at the exact points where the various concession and side road lines intersect: they are driven within eight inches of the surface of the ground and have the numbers of the lots and concessions marked with a cold chisel on the respective sides thereof.

Fish, game and fur of the usual kind common to this section of the Province are to be found in abundance. Frequent observations for azimuth were taken on Polaris at elongation: also solar observations for latitude, records of which will be found in the notes.

Trusting that this report and the accompanying plans, field notes, etc., of the survey will be found complete and satisfactory to your Department.

I have the honour to be, Sir,

Your obedient servant,

(Signed) J. W. Fitzgerald,

Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 28.

SURVEY OF PART OF THE TOWNSHIP OF HALL, DISTRICT OF SUDBURY.

PETERBOROUGH, ONT., March 22nd, 1916.

SIR,—I have the honour to submit herewith the field notes and plans of the survey of part of the township of Hall in the district of Sudbury, performed by me under instructions from your Department dated October 23rd, 1915.

I commenced this survey at the north-east angle of the township, from this point I produced O.L.S. Stewart's Meridian line due south astronomically giving concessions VI and V a depth of eighty chains each, and from the points thus established I ran the lines for the fronts of concessions V and VI due west astronomically to the west limit of lot 4. Lots 1, 2, 3, and 4 having been previously laid out by me and given a width of forty chains each; along the north boundary of this township I ran the side lines between lots 2 and 3 and lots 4 and 5 south astronomically to the south limit of concession V.

That portion of the township surveyed by me comprises an area of 2,562 acres. As this township lies immediately south of and is very similar in its general characteristics to the township of Cavell, on which I have just reported very fully, I do not consider it will be necessary to repeat this information.

As will be seen by the plan a very considerable area of this part of the township is covered by the waters of Grassy and Tassie lakes. It will also be noticed that there is a considerable area of drowned land.

A good wagon road leading to the Shannon limits on the Spanish river waters crosses the easterly subdivided part of the township.

A round iron post one and one-quarter inches in diameter and three feet long furnished to me by your Department is planted at the intersection of the line in front of concession V with the side line between lots 4 and 5. This post is marked "Con. V" on the north side, "Con. IV" on the south side, "Lot V" on the west side and "Lot IV" on the east side. It has also the name "Hall" marked on the north-east side. At all other intersections of side lines and concession lines surveyed by me are planted solid iron posts seven-eighths inches square and two feet six inches long. These posts are planted at the exact points where the various concessions and side lines intersect, they are driven within eight inches of the surface of the ground and have numbers of the lots and concessions marked with a cold chisel on the respective sides thereof.

Fish, game and fur of the usual kind common to this section of the Province are to be found in abundance. Frequent observations for azimuth were taken on Polaris at elongation. Also solar observations for latitude, records of which will be found in the notes.

Trusting that this report with the accompanying plans, field notes, etc., of the survey will be found complete and satisfactory to your Department.

I have the honour to be, Sir,

Your obedient servant,

(Signed) J. W. FITZGERALD,

Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 29.

SURVEY OF PART OF THE TOWNSHIP OF JOFFRE, DISTRICT OF SUDBURY.

PETERBOROUGH, ONTARIO, March 22nd, 1916.

SIR,—I have the honour to submit herewith the field notes and plans of the survey of part of the township of Joffre, in the district of Sudbury, performed by me under instructions from your Department dated October 23rd, 1915.

Having already surveyed parts of the townships of Hall and Carew lying immediately west and north, respectively, of this township, and having made concessions V and VI on the east boundary of Hall eighty chains each in depth, and having made lots 12, 11, 10 and 9 forty chains each in width along the south boundary of Carew, I produced the lines between concessions IV and V and V and VI of the township of Hall due east astronomically to the east limit of lot 9. I also produced the side lines between lots 11 and 12 and 8 and 9 of the township of Carew due south astronomically to the south limit of concession V. That portion of the township surveyed by me comprises an area of 2,558.12 acres.

As this township lies immediately south of and is very similar in its general characteristics to the township of Carew, on which I have just reported very fully, I do not consider it will be necessary to repeat this information.

As will be seen by the plan, this township is considerably cut up by Vernon or Ramsay lake and Turbull creek or Pogamasing river, which enters the lake on lot 9, concession VI.

A good wagon road leading to the Shannon limits on the Spanish river waters crosses the north-west angle of the township.

A round post one and one-quarter inches in diameter and three feet long, furnished to me by your Department, is planted at the intersection of side line between lots 8 and 9 and the line in front of concession V, this post is marked "Con. V" on the north side, "Con. IV" on the south side, "Lot IX" on the west side and "Lot VIII" on the east side. It has also the name "Joffre" marked on the north-west side. At all other intersections of side lines and concession lines surveyed by me are planted solid iron posts seven-eighths inches square and two feet six inches long. These posts are planted at the exact points where the various concession and side road lines intersect; they are driven within eight inches of the surface of the ground and have the numbers of the lots and concessions marked with a cold chisel on the respective sides thereof.

Fish, game and fur of the usual kind common to this section of the Province are to be found in abundance. Frequent observations for azimuth were taken on Polaris at elongation, also solar observations for latitude, records of which will be found in the notes.

Trusting that this report with the accompanying plans, field notes, etc., of the survey will be found complete and satisfactory to your Department.

I have the honour to be, Sir,

Your obedient servant,

(Signed) J. W. FITZGERALD,

Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 30.

SURVEY OF PART OF THE TOWNSHIP OF CAREW, DISTRICT OF SUDBURY.

PETERBOROUGH, ONT., March 22nd, 1916.

SIR,—I have the honour to submit herewith the field notes and plans of the survey of part of the township of Carew, in the district of Sudbury, performed by me under instructions from your Department dated October, 23rd, 1915.

Commencing at the south-west angle of this township I retraced O.L.S. Stewart's Base Line a distance of two miles east making lots 12, 11, 10 and 9 forty chains each in width, and from the points thus established I ran the side lines between lots 10 and 11 and 8 and 9 due north astronomically to the north limit of concession IV, the lines for the fronts of concessions II, III, IV and V were run due east astronomically from points already fixed by me on O.L.S. Stewart's Meridian.

That portion of the township surveyed by me comprises an area of 5,101.79 acres and may be described as gently rolling or undulating in character. It has been swept over many times by fire so that with the exception of that in the swamps little of the original timber now remains, the second or present growth being made up, for the most part, of small poplar, birch, alder and willow and some jack pine now generally known as brulé. I would consider fully sixty per cent. of that portion of the township subdivided by me very fair farming land, being a clay or sandy loam from eight to twelve inches in depth, fairly free from stone and resting on a gravel sub-soil. This land may now be very easily cleared and I feel quite sure that if its location and accessibility were generally known it would be very quickly taken up and settled upon.

The swamps, which make up probably fifteen to twenty per cent. of the total land area, present the usual characteristics, in some places soft and peaty, at others of a firmer consistency, especially where found resting on a clay or gravel sub-soil. There are, of course, as is common to nearly all this section of Northern Ontario, low rocky bluffs and ridges, but the proportion of good arable land in this immediate locality I believe to be far above the average found in this section of Ontario.

Considering the adaptability and accessibility of this district for settlement I would respectfully suggest to your Department the advisability of extending this survey and opening up that part of the country for settlement as soon as possible.

A round iron post one and one-quarter inches in diameter and three feet long furnished to me by your Department, is planted at the intersection of side line between lots 8 and 9 and the line in front of concession V, this post is marked "Con. V" on the north side, "Con. IV" on the south side, "Lot IX" on the west side and "Lot VIII" on the east side. It has also the name "Carew" marked on the south-west side. At all other intersections of side lines and concession lines surveyed by me are planted solid iron posts seven-eighths inches square and two feet six inches long. These posts are planted at the exact points where the various concession and side road lines intersect, they are driven within eight inches of the surface of the ground and have the numbers of the lots and concessions marked with a cold chisel on the respective sides thereof.

The Canadian Pacific Railway's Transcontinental line crosses the first, second and third concessions, through lots 9, 10, 11 and 12. In this division it is a double track system and neither time nor money seems to have been spared in making the roadbed as nearly perfect as possible.

A good wagon road leading to the Shannon limits on the Spanish river waters crosses the south-west corner of the township.

Mr. Shannon, of Bisco, has a clearing of about twenty-seven acres located on lots 11 and 12 in the third concession. There are also two settlers in that part of the township surveyed by me, Nazareth Darby is located in a triangular piece of land on the south-east corner of lot 12, concession 3. He has a house built and five or six acres cleared. Donar Lefonte is located on lot 12, concession 2, he has a house built and has about six acres cleared on this lot.

This tract is well watered by numerous lakes, creeks and ponds, and also by Turnbull creek or Pogamasing river, which flows southerly through the first four concessions of the township. This stream has an average width of thirty to fifty links and an average depth of from two to five feet. It has a fair current and is, I understand, used for the floating of logs and timber.

Fish, game and fur of the usual kind common to this section of the Province are to be found in abundance. Frequent observations for azimuth were taken on Polaris at elongation also solar observations for latitude, records of which will be found in the notes.

Trusting that this report with the accompanying plans, field notes, etc., of the survey will be found complete and satisfactory to your Department.

I have the honour to be, Sir,

Your obedient servant,

(Signed) J. W. Fitzgerald,

Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 31.

Survey of the Township of Owens, District of Timiskaming.

Fort William, Ontario, January 31st, 1916.

Sir,—I beg to submit the following report on the survey of the township of Owens, in the district of Timiskaming, surveyed by me under instructions dated at Toronto, September 16th, 1915.

I proceeded to McPherson on the Transcontinental Railway, taking with me certain members of my party. I had already arranged with a surveyor then in the north country for a number of men, including a transit man, a chain man and eight axe men with boats, to meet me there, but on arriving found neither men nor boats. I then sent the men I had brought with me into the township to put up camp, etc., whilst I went to Cochrane and other points to secure men. This, of course, caused considerable delay, and did not give me as strong a party as could have been desired. Owing to the phenomenally wet weather

experienced, men were frequently leaving the party and others had to be secured. In the latter part of the season $3.50 a day and board was asked by axe men and packers and $3.00 paid, with bonuses.

This township was laid out with a double front on each concession road allowance as run on the ground. The centre lines of concession and side roads were well opened up and blazed. Particular care was taken in the planting of durable and substantial posts, all plainly marked, in accordance with the instructions. For this purpose spruce, cedar or tamarac was used. Iron posts were planted alongside the wooden posts at the points indicated on the projected plan sent me with my instructions. The wooden posts were planted on the lines of survey and on the limits of the road allowances. Bearing trees were taken to these latter posts. In only one case did the front angles of lots come in a river, namely, those between lots 2 and 3, in concessions 4 and 5. In this case the lines were projected north and south and the posts planted one chain from the water's edge, guide posts being planted near the shore.

Although this work was performed late in the season the posts were firmly planted as there was no frost in the ground except a little at some few high spots. In fact rain or sleet fell every day but two during the course of the survey. This made the country extremely wet and the packing and locating of suitable camp sites extremely difficult. Certain check chainages which were required were left to be obtained after the freeze up, but the latter part of December, beneath two and a half feet of snow, the ground was still soft and wet making the work extremely arduous.

The National Transcontinental Railway crosses part of this township in a north-westerly direction. Along this railway I laid out a road allowance one chain in perpendicular width on either side of the same. In planting posts along this right-of-way I adhered to the instructions, as shown on the field notes. Before marking these lots adjoining the railway I wrote to the Department for full information as to the same.

I showed a road allowance of one chain in perpendicular width along each bank of the Kapuskasing river, and a similar road allowance around the lakes met with in the survey, except in the case of one small lake which was not cut by the road allowance. The only other river encountered in this survey was what is known as the Lost river. This river is less than a chain in width for the greater part of its length, is overgrown with alders and willows, rendering it hardly more than a creek; for the greater part of its course in the township it was found impossible to use a canoe on it; this was not traversed.

I made no traverse of the Kapuskasing river, having been instructed to that effect, but careful ties were made to the bearing trees noted at the time of the river traverse by Messrs. Sutcliffe & Neelands.

In my instructions I was told to take observations for azimuth at least once a week to verify the direction of my lines. However, owing to the almost continuous rain before referred to, it was found to be impossible to obtain more than two observations throughout the entire course of the work, these being the only occasions when the sky was sufficiently clear to allow of this being done, although an extra instrument was kept in camp for the purpose. Practically half the township was completed before the first observation was obtained. My concession lines were run off the east limit of the township, the latter line having been run some years before. Great care was taken in starting these lines, trial lines being run for some distance along the east boundary when satisfactory pickets could not

be found thereon. Owing to the lack of observations in the early stages of the work it was difficult to make the usual corrections in the direction of lines, it being impossible to determine which of two converging lines was correct.

Timber.

The timber throughout the township is for the greater part spruce, varying in size from 2 to 8 inches, much good for pulpwood, but little good for other purposes. For about a mile on each side of the Kapuskasing river some larger timber was found consisting of spruce, birch, poplar and tamarac, from 10 to 18 inches, with small quantities of cedar near the water. As shown in the notes there are a number of poplar ridges running through the township with poplar from 8 to 12 inches.

Soil.

The soil is of clay throughout the entire township; this clay is covered with moss sometimes three feet or more in depth. At the time this survey was performed there was a considerable quantity of water throughout the township due to the unusual rains. Due regard has been paid to this fact in the field notes and little mention made of the water, it being realized that this water will not be standing in normal times. It will be understood that several of the smaller creeks shown in my field notes are merely creeks draining off this water, and that these will not exist in normal times. Due attention was paid to this in the notes and care taken not to exaggerate the size of these smaller streams.

Minerals.

No minerals were met with in the course of the survey, the entire township being of clay formation.

Game.

The larger game appear to have gone farther back from the railway, but fur-bearing animals, mink, marten, beaver, etc., are plentiful.

There are no roads nor trails throughout this township except along the Kapuskasing river, these having been made by prisoners from the internment camp. All parts of the township are, however, readily accessible, or will be when the standing water mentioned above has run off.

I have endeavoured to follow the instructions to the best of my ability with regard to the running of the lines, the planting of posts, and the compiling of the plan and field notes, and trust that everything, upon inspection, will be found satisfactory.

I have the honour to be, Sir,

Your obedient servant,

(Signed) E. R. Bingham,

Ontario Land Surveyor.

The Honourable, the Minister of Lands, Forests and Mines,
Toronto, Ontario.

Appendix No. 32.

Honourable G. H. Ferguson, Minister of Lands, Forests and Mines, Toronto, Ont.:

Dear Sir,—I beg to hand you herewith detailed statements of "Applications for Loans" received from settlers, and also of loans granted, up to October 31st, 1916, summary of which is as follows:—

Loans to Settlers Northern and North-Western Ontario.

During the period from August 12th, to October 31st, 1916, the number of applications received was 606, covering an aggregate amount of $230,800 distributed as under:—

District.	*Number.*	*Amount.*
Nipissing	8	$3,000 00
Temiskaming	375	140,175 00
Sudbury	6	2,800 00
Algoma	17	6,400 00
Thunder Bay	146	57,075 00
Kenora	47	18,400 00
Rainy River	7	2,950 00
Total	606	$230,800 00

Owing to the conditions existing in the district of Temiskaming during this time every effort was made to grant as much assistance as possible to those desiring loans in that district, and after inspections had been made a total of 121 loans were granted to the amount of $36,525, as follows:—

Crown Lands Ageney.	*Number.*	*Amount.*
Haileybury	2	$500 00
New Liskeard	15	5,225 00
Englehart	19	4,675 00
Matheson	36	14,550 00
Cochrane	49	11,575 00
Total	121	$36,525 00

Consideration is now being given to all the other districts, and from the number of applications which have been received since the Act has been put into effect, it would appear the settlers generally are desirous of taking advantage of the opportunity presented to secure funds for the further improvement of their farms.

Yours very truly,

F. Dane,

Settlers Loan Commissioner.

Appendix No. 33.

ALGONQUIN PROVINCIAL PARK REPORT, NOV. 1916.

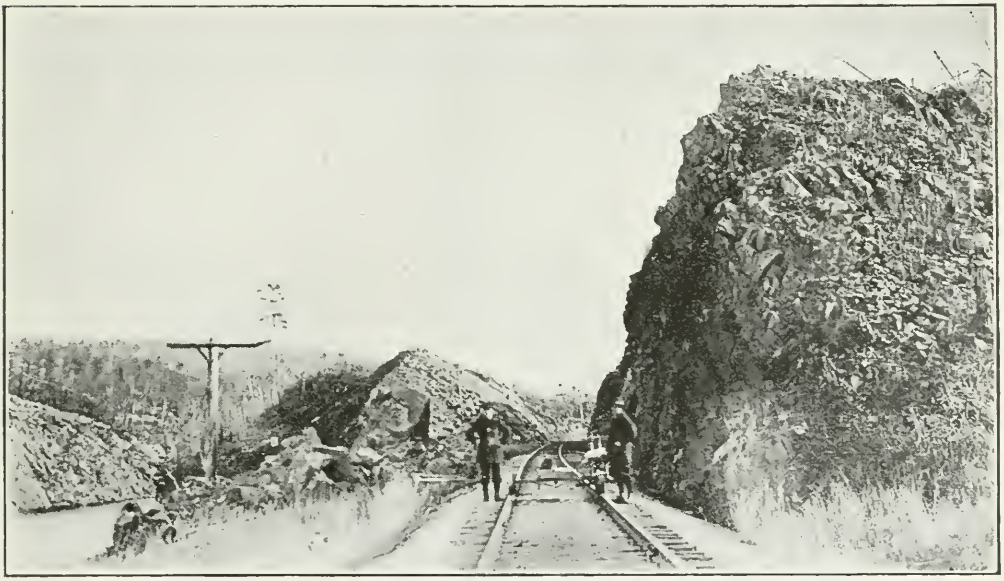
HONOURABLE SIR,—I beg to hand you my report for the fiscal year ending October 31st, 1916.

Our staff has been composed of thirty-two rangers and superintendent, three of whom have been absent all year, having enlisted for overseas service. Ranger Stringer went over early, and is employed with the Forestry Battalion; Major Robinson has been occupied in various ways in recruiting, and is now overseas; Lieut. Callighan is still in Barrie: this leaves a staff of twenty-nine rangers engaged in park work. One of these, Robert Balfour, I regret very much to say, was five months ago stricken with paralysis, and I fear will never be fit for work again. He served faithfully as a ranger for over twenty years.

This has been a most fortunate year so far as forest fires are concerned; we have had several start, but all were put under control quickly, and no damage whatever was done. The fire tank stationed here by the Grand Trunk railway is a great safeguard, as it is always ready and can be taken out by the engine of the nearest train to any point along the line where fire starts. The phone line too has been of great assistance in enabling us to get word quickly and summon help where needed. Perhaps the greatest help has been the cleaning up of the right-of-way, and a distance into the woods on each side. This work, in accordance with your instructions, has been continued, but, I am sorry to say, not so much accomplished as I had hoped, owing to the difficulty in procuring men. Notwithstanding we offered much larger pay than formerly, men could not be had at any wage. We have cleaned about forty miles, on each side of the track, greatly improving the appearance, and being of incalculable value as a fire preventative. This is through the section where the woods are of most value. There are parts that have been completely burned over. It will take another year to complete this work. The task has been greater than at first would appear, as the road allowance or right-of-way was never logged, and brush cut year after year was allowed to remain where it fell, making a slash and fire trap almost up to the rails. It really represents logging, stumping and burning a strip eighty miles long by one hundred and fifty to two hundred feet wide and in places even more. There is no doubt this work has already been the means of saving a great deal of territory from fire. The cleaning up has been done by hired help under the direction of one of our staff, and the Government team has been used right through. The men are under canvas and move along as the work requires. The Grand Trunk Railway pays half of the entire expense.

The rangers to the north, along the line of the Canadian Northern Railway now completed through the north end of the park, were early in the season supplied with speeders. These have proved of great assistance in enabling them to get quickly to any fire started along the track, and they have been able to give material assistance to the regular fire rangers. I have recently returned from a trip through the north section where I found game of all kinds had very much increased, especially in the new section where previously it had been all trapped out. Beaver were in evidence everywhere and have already begun to dam up the ditches along the new railway. At Brent, located on Cedar lake, the Canadian Northern have made a large clearing and have put in extensive sidings, built large round houses, a turn table, etc., and purpose making this a divisional point. I

found two of their employees here had built houses on the lake shore, thinking so long as they were within the one chain allowance it was permissible. Our ranger at that point forbid them to go on with the work, but they finished the houses. One of the men has since been removed, and has rented his house. I would recommend that the Department make some arrangement with the railway people, whereby they will see that their employees do not build shacks at this and other points along the line within the park boundaries. I think the company should be required to provide proper accomodation for all men in their employ where their line runs through the park. They have built good section houses at all points where required. The worst place will be Brent, where several men will be stationed the year round. It might be well to supply our rangers with printed notices on linen forbidding parties to erect buildings of any kind without the Minister's permission. The question of summer hotels will no doubt come up



Rock cut, Canadian Northern Railway, Algonquin Provincial Park.

during the coming year, and it would almost seem necessary to allow one at Brent as there is no doubt the northern lakes will be very popular owing to the excellent fishing in these waters, but for the present I do not consider it would be at all advisable to grant leases along this line to tourists and others.

I have reported to your Department on the matter of the Indian farm on Manitou lake, which has reverted to the Crown. I think it very important that the Government should retain this lot, but would recommend allowing the old Indian couple who have lived there for nearly fifty years to remain for their life term, making them some compensation for the clearing and buildings. I have visited the point on Couchon lake applied for by the firm of Richie Bros., of Aylmer, Que., for the purpose of erecting a mill to cut their lumber there instead of making the long and expensive drive by water to Aylmer. The country to the north of this point, all burnt for a distance north of the park line, is not far from the piece

of land asked for; at the same time I regret that all the young pine on these limits should find its way to the saw instead of becoming the property of the Crown.

I was much gratified to note the rapidity of growth in the young pine through the Pembroke Lumber Company's limits recently acquired by the Government. A few years hence no one will doubt the wisdom of that purchase. I sincerely hope more of that section will be bought and the fine young growth protected. Nature is doing a great work through these depleted sections, and if only protected, splendid young pine forests will be handed down to the next generation.

We have built five new shelter houses during the past year, all good substantial buildings; two of these are on the west side, one south of the Grand Trunk railway, and one at Big Tea lake. At Kiosh-ko-qui we have built a large frame storehouse and workshop, this being our main point on the new (Canadian Northern) railway I have also arranged with the railway company to allow us to put in a phone here

Stand of young pine, Petawawa limit, acquired from Pembroke Lumber Company Algonquin Provincial Park.

and tap their phone line, the only expense being the phone. This will give our men phone connection between North Bay and Pembroke. At Grand lake we have built a good frame shelter; this too is on the line of the Canadian Northern Railway at a station called Achray, giving us good buildings at Coristine, Brent and Achray. A daily train is now being run over this line, a mixed train of freight and passenger between Pembroke and North Bay remaining over night at Brent. There are nine stations in the park.

During the past year we have completed the Government phone line from Lainy lake to Kearney, a distance of sixteen miles. At this point we connect with the Bell Telephone Company, and now have a well-equipped line from Whitney to Kearney, sixty-one miles. We hope to get a good revenue from this line in the future. The Bell line at present is overloaded between Orillia and Toronto, and they confine our service, except upon Government business to points between Orillia

and North Bay. This I hope before the tourist season comes on again will be changed; as many of our summer visitors want long distance connection. Last summer we talked with Detroit with perfect satisfaction. The ticking of a watch can be heard from one end of our line to the other, and I consider we have one of the best local lines in the country. We have phones at eleven different points along the sixty-one miles.

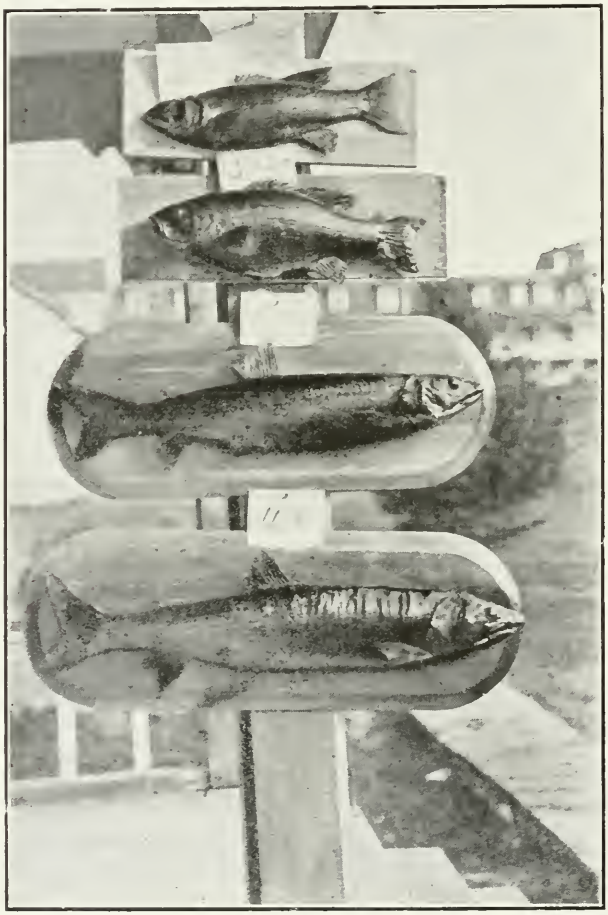
Substantial improvements have been made at headquarters. Cement walks have been built four feet wide to replace the old plank walks; bath rooms and all up-to-date sanitary arrangements have been put in at both houses, and a large septic tank upon the most approved plans has been installed; a cement basement has been put under the kitchen at the superintendent's house, the foundation having rotted, making this necessary. All this work, beside cutting wood, putting in ice, etc., has been done by our own men during times they were not required to patrol their beats, and at a cost of only the actual material used. During the trapping season our men constantly patrol their sections, each two men having a section which they are expected to patrol and keep in good shape with portages, etc., When we build, two sections go together and help one another, thus giving them four men, or six, if required. In this way our men help each other and we hire no other assistance.

Several cottages have been built at Cache lake during the past year, and several leases applied for and granted, the parties paying a $10.00 survey fee and $7.50 per year rent on each acre, the maximum being two acres. They get a twenty-one year lease. We have five school camps in the park; these pay an annual rental of $75.00, and are allowed five acres. They are situated, one at Lake of Two Rivers, two on Cache lake, one on Source lake and one at Joe lake. These camps are a fine thing for the young people who are able to avail themselves of them, building them up in mind and body and filling them with a love of nature that cannot but make nobler men and women of them. The schools are well patronised; the girls in camp on Cache lake under Miss Case numbered sixty odd. We have two hotels and a boarding house; the Highland Inn at Cache lake, Hotel Algonquin at Joe lake, and Mowat Lodge at Canoe lake, besides the two cottage camps in connection with the Highland Inn; one at Big Island lake and one at Smoke lake. These have all been filled to overflowing, and many applicants had to be refused from lack of room.

Our sales of fishing permits were not quite up to last year, although we had a great many more people here. Our young men are away serving the Empire, and our visitors were principally parents and younger members of families who did not fish. Still we sold here fishing licenses to the amount of $1,037; also guide's licenses $35, and maps $10. We collected $495 in rents. These amounts do not include rents from the Grand Trunk Railway and hotels, which are paid direct to the Department. The fishing has been good, and some fine specimens taken. A quantity of fry and fingerlings has been put into the lakes near the railway by the Fish and Game Department.

Fur-bearing animals of all kinds are increasing rapidly. We had hoped to sell a number of live animals, but the war has destroyed this industry temporarily. We did, however, ship out seven live beaver to points in the United States at $50 a pair. We are now in shape to handle live animals properly. Ranger J. Bartlett has invented a trap whereby we can take them alive without injury, and we have a splendid animal house, well supplied with water and all necessary equipment to handle them, and I have no doubt after the war a big business will be done in

live animals, for which we get a much better price than for the pelts alone. Furs were taken which were sold to the amount of $2,322.65. We did not take out a large quantity owing to the state of the market. The annual increase of beaver must now be many thousand; it is therefore evident many can be taken out yearly and still retain a large part of the annual increase. Otter, mink, marten and fisher are also very abundant, while deer are in evidence in large numbers everywhere. The territory all round the park is a favourite hunting ground for several large clubs, and, of course, the deer from the park keep these sections replenished.



Some of last year's catch, Algonquin Provincial Park.

Lumbering in the park during the past year has almost been at a standstill, owing to the difficulty in getting men, and the depression in the market caused by the war.

We have had only a few minor breaches of the law, and I am glad to say conditions in that respect have very much improved. Several guns have been confiscated and sent to Toronto, as required by the park regulations. The Northern Development Branch under your instructions has made a great improvement in the roads from headquarters to Big Island lake, a distance of ten miles,

and Smoke lake, eight miles to the south. At each of these points the Grand Trunk Railway has log cottages and one large general camp. The cottages will accommodate six to eight people, while a number can be put up at the main camp, and all are supplied with meals at the latter. These camps are run in connection with the Highland Inn, and a daily stage runs from here to them. They have bath rooms, open fire places, etc., and the sanitary arrangements are good.

It would be a great boon to our towns and cities if we had a road into the park so that motor parties could run their cars right to this point; they now run as far as Kearney, within thirty miles of the road to Smoke lake and thirty-five miles west of headquarters.

I would recommend taking out a quantity of fur, especially beaver, for next spring's sale. The large increase warrants this, and the price of beaver pelts will no doubt be good, notwithstanding the open season, as the fur is fashionable this year again.

I would recommend putting in more fry and fingerlings again next year, both bass and trout. The lakes along the railway and near the hotels will require constant re-stocking, not only on account of their being fished more, but because, being head waters, they supply the lakes for a long distance down stream. In fact bass fishing is now good the entire length of the Madawaska river, where none were known before the lakes in the park were stocked. As the demand upon the hatcheries is large, I believe it is necessary to apply for fry and fingerlings early in order to secure them.

I have the honour to be, Sir.

You obedient servant,

G. W. Bartlett,

Superintendent.

Honourable G. Howard Ferguson, Minister of Lands, Forests and Mines.
Toronto, Ont.

Appendix No. 34.

Quetico Provincial Park.

Quetico Park Headquarters, October 31st, 1916.

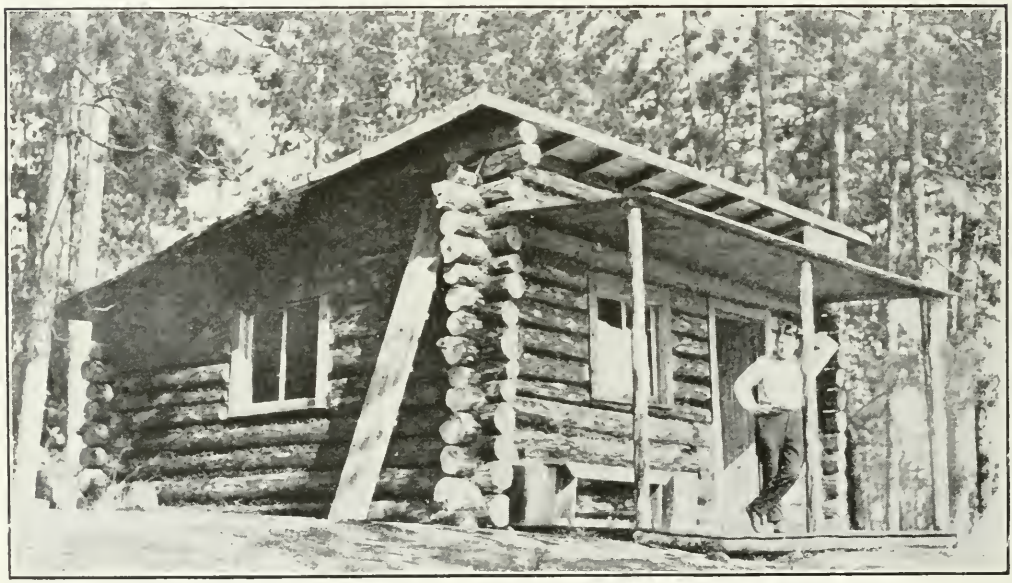
To the Honourable, the Minister of Lands, Forests and Mines, Toronto, Ontario:—

Honourable Sir,—I beg to hand you my report on the Quetico Provincial Park for the fiscal year ending Oct. 31st, 1916.

At the present time our staff consists of superintendent and nine men. Three of my rangers enlisted during the past year, two of whom are wounded and are now in hospitals in England. I trust that your Department may re-instate some of these men if they are fit for service in the park on their return from the war. Two of them write me occasionally and request to be taken on my staff again if they survive. I would be pleased to have them as they are good men.

We had seven fire-rangers in the park during the fire ranging season, May 1st to Sept. 30th. Three fires occurred in the park last summer. One on a point on Knife lake on the International boundary, which burned about 500 feet in from the water, but did not destroy any timber. It was noticed in time by the park rangers in the vicinity, and extinguished before the timber was damaged. It is supposed that this fire started from a camp fire left unquenched by a party of surveyors on the International boundary survey.

Another fire, started by lightning on Shortiss island on August 2nd, burned the underbrush among the pine trees for about 80 acres, but did not do any great damage to the pine timber. A third fire occurred in July on timber berths 12 and 13 in the vicinity of Long lake, Ann lake and the west end of Quetico lake, which scorched quite a quantity of timber. This fire came in from the north from the direction of the Canadian Northern Railway, where a bad fire occurred during that



Ranger's cabin, Pickerel Lake, Quetico Provincial Park.

time. The Shevlin-Clarke Lumber Co., of Fort Frances, Ont., who hold the berths, are now preparing to cut the timber this winter.

Owing to the war and consequent scarcity of men in this vicinity during last summer it was almost impossible to secure sufficient suitable men to patrol the park properly. Men who would suit on land patrols along railroads and cut-over limits would not do here, as all of our travelling has to be done by canoes, and a man who is not a canoeman is useless in Quetico.

On account of scarcity of labour last season I had to abandon work on the wagon road from Eva lake to Kawene station, over which we have to haul our feed, provisions and other supplies. I hope next season to be able to put this road in good condition as during summer it is almost impassable.

On April 21st last we had a very heavy fall of snow, nine inches, which broke down many balsam and jack pine trees and blocked up our roads and portages all of which had to be cut out again. Snowshoeing last winter was the worst yet

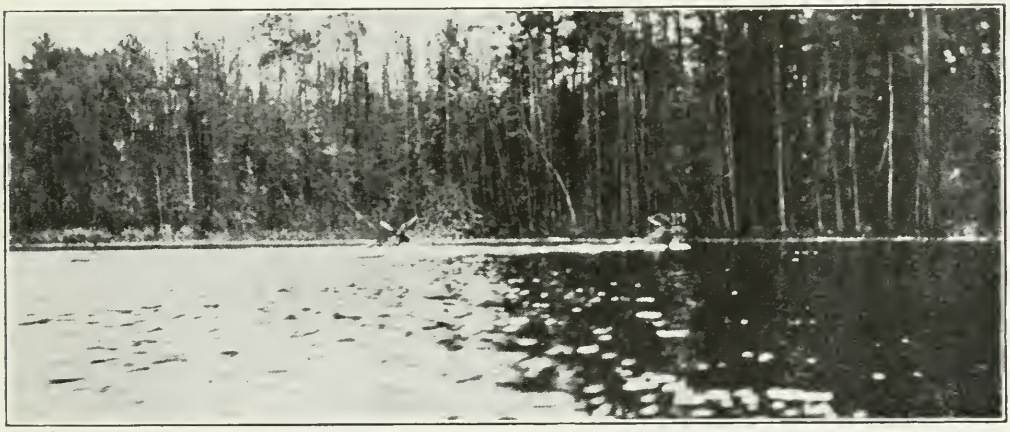
experienced in this country. The rivers did not freeze over until well on in January. The lakes, owing to the heavy weight of snow were full of air-holes and covered with slush until March. The ice was very unsafe for travelling. I had my team in through the ice on three different occasions.

The high water in the spring washed out many of our portages and bridges, also many of our small landing docks.

We improved some of our shelter huts last summer, built one on an island in Agnes lake, and one at Prairie portage on the boundary. Many of the old portages were cleaned out and some new ones cut.

I consider it advisable to build several look-out towers next summer, say from thirty to forty feet in height, which could be done at small cost. This is a flat country and observations cannot be had for any distance from the hills.

I would suggest that a telephone line be erected from headquarters here to Kawene station on the Canadian Northern Railway. This would save much valuable time, as, for instance, a telegram sent me by one of my rangers stationed at Basswood lake, from Winton, Minnesota, in reference to a fire along the boundary



Moose in Sturgeon Lake, Quetico Provincial Park.

lay at Kawene for two days before I received it. No one from here happened to be out, and there is no way of getting from Kawene in here with a message. The line could be built around Eva lake a distance of twelve miles. Two hundred metal boundary signs were sent me by your Department in June last. Many of these were placed at portages and along canoe routes along the different boundaries. The balance of the signs will be placed next season.

The Canadian and United States Boundary Survey parties placed iron monuments at many points along the International boundary during the summer, which will be of great assistance to us in determining the boundary which, previous to this, was a very difficult matter. It is expected that the survey work along the park waters will be completed next year.

Game, especially moose and red deer are still numerous; very many were seen during the summer. Beaver are increasing very rapidly; in some places we will have to cut new portages owing to the flooding of the ones now used along streams and lakes where the beaver have built dams. Fisher are very plentiful, also foxes, but mink are very scarce. Quite a few otter were noticed this season.

Wolves are still numerous, quite a few were poisoned last winter, but owing to the frequent heavy snow falls many were lost. I found several when the snow went off in the spring. Owing to the difficulty in procuring bait it is not an easy matter to get them. Last winter we were fortunate to find some carcases of moose killed by wolves in which we placed poison. I am pleased to know that a bounty is now paid for the killing of the smaller wolf, as he destroys much game.

The restriction placed on hunting of partridge is a good idea, and will give them a chance to increase as they are almost extinct here now. There are scarcely any rabbits in the park or surrounding woods this season.

Trout caught in Pickerel Lake, Quetico Provincial Park.

A few flocks of ducks were seen in the lakes en route to the south. As there is no feed in these lakes for them they do not remain. We did not notice any signs of trapping or hunting in the park last winter. The Indians on the reserve at Lac La Croix do not come into the park as they used to. Some pass through on their way to Lac Mille Lac and other places, but apparently observe the regulations.

There were not so many tourists in the park as in 1915. The early part of the season was cold and wet and later on the flies were bad, which prevented many from taking their usual canoe trip. Many of them intend returning next year, as they are delighted with the canoe trips through Quetico.

At present we are engaged at headquarters in getting out fire wood for the

winter, and in fixing up the buildings. I had to get in some lumber and put a new roof on our stable and hay shed, the old roof was broken up during a wind and hail storm in August last.

On Oct. 16th the first snow fell and since that time we have had several snow falls. The snow is now fourteen inches deep, but as there is no frost in the ground I expect much of it will melt away.

I trust we may have a better season for travelling on the lakes and rivers than we had last winter.

I have the honour to be, Sir,

Your obedient servant,

A. J. McDONALD,

Superintendent.

Appendix No. 35.

COLONIZATION AND IMMIGRATION.

The following table shows the record of the work of this branch for the year ending October 31st, 1916, as far as it can be shown by statistics:—

Number of American farm labourers placed by Bureau of Colonization	600
Northern Ontario calendars circulated	50,000
Northern Ontario hangers: "A New Land Nearby," circulated	3,000
Northern Ontario booklet: "A New Land Nearby," circulated	20,000
"Ontario" handbook, circulated	5,000
Hangers: "Ontario, the Land of Opportunities," circulated	1,000
"Opportunities in Ontario" (Heaton's), circulated	20,000
"Farming Opportunities in Ontario" (Farm Property Values), circulated	11,000
Railway certificates to settlers going to Northern Ontario	1,224

Since the war commenced the only available country to canvass for emigrants therefrom is the United States. Farm labour being at a premium in our Province, it was unanimously decided at a conference in the office of the Minister of Agriculture held on February 24th, 1916, to send a number of agents to that country. These agents were instructed to be very careful in their selection of applicants and consequently the number secured was small in comparison with the numbers that applied. Out of about 3,000 applicants 600 were selected and placed on farms, where most of them gave general satisfaction. Many men interviewed were undesirable or of enemy origin. On the other hand, we experienced great difficulty in convincing favourable applicants that Canada was not under military conscription. The antagonism our mission met was due to misleading reports in certain American papers, to people that made it their business to dissuade intending settlers, to ignorance, to the enemy element, and to maliciousness on the part of rejected applicants. We are confident, however, that this difficulty will be overcome by the influence of men that have fulfilled their engagements with our farmers and that intend to return in the early spring, and by other men that have written favourable letters home, thereby inducing some of their friends and relatives to come. Another difficulty met, of a peculiar but not uncomplimentary character, was the voluntary enlistment of quite a number of our immigrants. Our antago-

Temiskaming District Exhibit, Canadian National Exhibition, Toronto, 1916.

Kenora and Rainy River Districts Exhibit, Canadian National Exhibition, Toronto, 1916.

Thunder Bay District Exhibit, Canadian National Exhibition, Toronto, 1916.

nists may, therefore, well reflect that a country worth fighting and dying for is one in which it is worth while to live and work.

The applications we had on hand from our Ontario farmers for farm hands called for from 7 to 12 months engagements, and we had no difficulty in getting the farmers to pay the amount we had to guarantee, namely, $35.00 per month, with lodging, board and washing.

While our agents were in the United States they were also very active in advertising the opportunities in Northern Ontario. Apropos of that country's attractiveness is a comment on the report of its staff correspondent regarding "the spirit manifested by the sufferers from the late fire in the district north of Lake Timiskaming," by a leading newspaper:—

"The reader cannot fail to be deeply impressed by the invincible courage and 'buoyant optimism' of those settlers who have manifested and proclaimed their determination to stick to their burnt-over farms in spite of pecuniary losses and still more depressing calamities. There must be something inherently and enduringly attractive in a locality which has the magnetic power to counteract the

Interior Immigration Office, opposite Union Station, Toronto.

repelling force of such a disaster as they have passed through. 'Troubled, but not distressed, perplexed but not in despair, cast down but not destroyed,' they turn to the future with an unwavering faith in the resources of the soil and in their own ability to utilize them. 'The land is still there, and it is wonderful in its richness,' so wonderful that nothing short of actual contact with it can convey to the observer an adequate idea of the real truth.

"The secret of this 'richness' is not far to seek: It is in the fact that the soil is a calcareous alluvial clay. The infused lime seems to be of just the right amount and quality to make the clay friable, so that, unlike the old-fashioned clay of southern Ontario, it does not 'cake' into bricks. Laid bare to the sun from several feet below the surface it will become pulverized instead of being hardened into 'adobes,' so that there is no 'sub-soil' in the ordinary sense of that term. This peculiarity is so pronounced that it is hard in some places to keep up the open drains on the highways. The deep, fertile soil of the western prairie offers no agricultural advantage over the deep, fertile soil of the Northern Ontario forest, where the timber may be made to pay partially if not wholly for the clearing."

Immigration Office, opposite Union Station, Toronto.

Algoma and Sudbury Districts Exhibit, Canadian National Exhibition, Toronto, 1916.

After the Canadian National Exhibition closed we established in our Immigration Office, 172 Front St. West, Toronto, a permanent exhibit, small but representative of the field crops of Northern Ontario. The richness of the soil is emphasized by a collection of samples of fodder crops, such as clover, alfalfa and alsike, and by a number of native grasses (also good for fodder) that grow in profusion in the majority of the districts. These fodders and sheaves of fall wheat and oats with large heads and straw five feet in length, give manifest proof that Northern Ontario will not yield to any other part of Canada the first place in field crop production. The exhibit was well advertised and was the means of interesting hundreds of people regarding Northern Ontario. They seemed astonished at the grain and vegetables the country produced and at the natural resources with which it abounded. Here, at our own door of Ontario, they remarked, is a wonderful country, rich in land, timber and minerals, and where clover almost everywhere grows as a weed, and all that advantage to be freely had at the low price of fifty cents an acre.

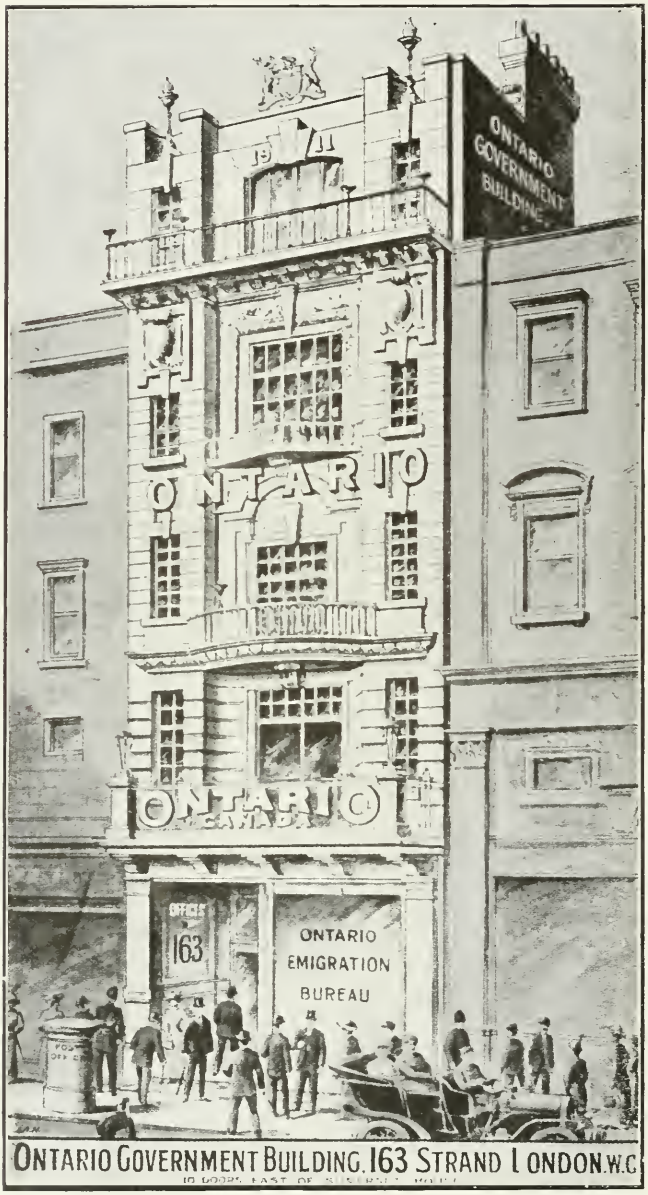
Perhaps few people are aware that in this city the Government maintains an institution that is something more than a turnstile through which settlers pass to

Log Cabin, Canadian National Exhibition.

their new heritage. The reception room is comfortable, with proper facilities to accommodate women and children, and it is also a school where many things are taught to the profit of citizen and settler.

Exhibit at the Canadian National Exhibition.

The Northern Ontario Settler's Home at the Exhibition this year, with exhibits from Timiskaming, Nipissing, Sudbury, Algoma, Thunder Bay, Rainy River and Kenora, in charge of the District Representatives and their assistants and also a representative from the Bureau of Colonization, was perhaps one of the most attractive features of the big show. A log house or bungalow may often be seen in Northern Ontario as well built as this one was. The heavy timbers were dovetailed together by an art almost unknown in the older parts of the Province, and its choice for the display of products, tastefully arranged from an agricultural standpoint, was as appropriate as it was effective. The logs were labeled, and some spruce logs gave an idea of the wood so much used for paper-making and certain classes of building. Thousands of people elbowed their way into this little log house from all parts of Canada and the United States but, of course, chiefly from our own Province. They evinced intense interest in the exhibits, and marvelled at the wonderful quality of grains and vegetables and at the country's enormous yield. Every visitor was presented with a pamphlet on Northern Ontario and with those that registered we are arranging correspondence that their interest may not be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lost. And we hope thereby to induce a good number to make their permanent home in the North.

ONTARIO GOVERNMENT EMIGRATION OFFICE, LONDON, ENGLAND.

The cut opposite shows the Ontario Government Emigration Office, which was built in 1911. The main object of this office in the Old Country is to advertise the agricultural resources of the Province and to encourage the emigration of farm hands and domestic servants.

For the past two years, or ever since the war started, their energies have been almost entirely devoted to doing what they could to assist our soldiers who have gone overseas, such as visiting the wounded, and to securing passports and vouching for Ontario people who require permits to enable them to travel in restricted areas.

H. A. MACDONELL,
Oct. 31st, 1916. *Director of Colonization.*

Appendix No. 36.

REPORT ON THE CONSTRUCTION OF ROADS AND BRIDGES, THE CLEARING OF LAND AND OPERATION OF EXPERIMENTAL FARM AND GARDEN PLOTS, AND THE DISTRIBUTION OF SEED GRAIN, UNDER THE PROVISIONS OF THE NORTHERN AND NORTH-WESTERN ONTARIO DEVELOPMENT ACTS, 1912 AND 1915

(During the Season of 1916.)

To the Honourable, the Minister of Lands, Forests and Mines:—

SIR,—I have the honour to submit a general report of the work done in the construction of roads and bridges, the clearing of land, the operation of Experimental Farm and Garden Plots, and the distribution of seed grain, under the provisions of the Northern and North-western Ontario Development Acts, 1912 and 1915, during the season of 1916.

The season's work on the construction of roads and bridges was continued throughout the winter of 1915-16, in re-surfacing roads with gravel, constructing bridges and taking out bridge timber.

In compliance with the Act passed at the Session of 1915, authorizing the distribution of seed grain and other seeds to settlers, it was found that in certain sections where the crops had been a failure in 1915 that unless the settlers were provided with seed grain they would be unable to purchase the same and would have been in a destitute condition this winter. The amount of seed granted to each settler on unpatented lands was limited to approximately $25.00. Oats, potatoes and grass seed were purchased and distributed to the amount of 14,566 bushels to 1,097 settlers. The seed was forwarded to them to the nearest railway station at actual cost, the amount being placed as a lien against their lot, re-payable the 1st of December at six per cent. interest. Few, if any, complaints have been received from the applicants and general satisfaction has resulted.

With reference to the construction of roads and bridges, the season of 1916 has not been entirely satisfactory; snow fell to a great depth during the winter of 1915-16, from four to five feet in many sections of Northern Ontario. Heavy rains fell during the early part of April, and the winter broke up very suddenly,

resulting in high water and floods on many of the streams. Many of the lumbermen's dams constructed for driving purposes broke away and as a result carried out many of the bridges constructed on the trunk and colonization roads. The freshets had also the effect of washing out newly constructed roads and culverts, which had to be re-constructed at a considerable cost. Heavy rains fell during the early part of May and delayed road construction work considerably. In the latter part of July and fore part of August extensive forest fires swept over parts of the district of Temiskaming, destroying many miles of corduroy road, culverts and small bridges. The re-construction and repairing of these roads, culverts and bridges has materially reduced the mileage of new roads constructed this season.

Owing to a great number of our best settlers having enlisted, it was difficult to get sufficient labor to carry on the work in certain sections. Labor and supplies were also higher than in previous years and for this reason several roads which it was the intention of the Department to construct, have not yet been touched. Good progress, however, was made during the dry season and first-class results obtained from the amount expended.

Operations were carried on over practically the same territory as in previous years,—from near Petawawa in the east to Kenora in the west; in the Rainy river valley; along the Sault Ste. Marie branch of the Canadian Pacific railway from Sudbury west; along the Canadian Pacific railway from Sudbury east; in the Port Arthur and Fort William districts; in the Wabigoon district between Dryden and the Transcontinental railway; along the Canadian Pacific railway between North Bay and Sudbury; south along the Grand Trunk railway as far as South River; in the Algonquin Provincial park; along the Temiskaming & Northern Ontario railway and the Transcontinental railway as far west as Hearst; and in all the different mining sections.

Settlers or residents of a district only were employed, except in the construction of ditches or on rock work. The largest number of men employed was during the months of July, August and September, when the average number employed at day's labor was 2,300, and on contract work about 500, or about 2,800 in all.

During the season up to the 31st of October, the sum of $513,533.15 was expended in the construction of roads and bridges, in the clearing of farm lands on both sides of the Grand Trunk Pacific railway east and west of the Kapuskasing river, and the construction of store-houses at the headquarters at Cochrane and Matheson, destroyed in the fires of July last; $10,125.53 was expended in the clearing and operation of farm and garden plots, and the purchase of thorough-bred stock; $24,916.63 was expended in supplying seed oats, potatoes and grass seed to 1,097 settlers; $6,630.00 was expended in the purchase of grass seed to be distributed amongst settlers who were burned out in the country between New Liskeard and Cochrane, on the Temiskaming & Northern Ontario railway, and between Cochrane and Hearst, on the Grand Trunk Pacific railway. Of this amount 25,819 pounds have already been distributed to 414 settlers, the balance to be distributed early this spring. The distribution of this grass seed will be of very great benefit to the settlers; much of the land burned over last July and August was left almost ready for the plow. The seeding of this down in grass seed will give to the settlers in the future an abundance of pasture lands and a supply of hay and clover for their stock.

Approximately 500 miles of road, new and old, was worked over during the season, of which 180 miles is entirely new road, the balance being roads cut out in previous years, or roads re-graded and surfaced and old roads partially improved; 18 miles of road was re-surfaced with stone and 83 miles with gravel; 50 bridges,

small and large, were constructed, and 350 iron culverts placed and several hundred wooden. Many of the old roads built in previous years were gone over and repaired with the small grader or road drag. After the destructive fire of July and August, in the Temiskaming district, which burned out many of the culverts and small bridges, work was immediately started repairing the most important roads and renewing the culverts and bridges. In that district this occupied the greater portion of September and October.

The Experimental Farm and Plots were operated this season in continuance of the work started two years ago,—the garden plot in Cochrane and the farm plot two miles west thereof; the garden plot and farm at the Ground Hog river, 50 miles west of Cochrane; the garden plot at Hearst, 130 miles west of Cochrane; one at the Kapuskasing river, 70 miles west of Cochrane; and one at the Nagagami river, 170 miles west of Cochrane. The results from all of these farms and garden plots were as in previous years entirely satisfactory. Clover, alfalfa and timothy grew in great abundance on all the different farms, and in fact was a first-class crop throughout the whole of Northern Ontario. Two crops of clover were grown in many instances, netting over three tons per acre, the average of the first crop of timothy or clover being from two to two and one-half tons per acre. Fall wheat did exceptionally well where tested and averaged from 35 to 45 bushels per acre. It was not injured in any way by the summer frosts. Up to the present only small areas have been sown. From the results of our experiments and very careful examination of different fields grown by private individuals, it would appear that fall wheat will be produced profitably in these Northern districts. Spring wheat on the different farms and throughout the district was a fairly good crop; that sown early or about the 1st of May on fall plowed land did not appear to have been injured by the early frosts. Oats, peas, barley, rye and nearly all the different kinds of vegetables matured in the clay belt along the Grand Trunk Pacific railway and the Temiskaming & Northern Ontario railway. Little damage was done by summer frosts where the crops were planted reasonably early. I have noticed an improvement in the climatic conditions of the country each year during the last five years where settlement has taken place and the land cleared up. Crops did not suffer as much during the dry season in July and August in the clay lands in the district of Temiskaming as they did in the older parts of Ontario, or in the western districts, where the soil is not the rich clay or clay loam met with in the district of Temiskaming. Pasture was abundant throughout the entire season; even in the dry hot weather in July and the early part of August it did not suffer materially. Few finer crops were seen in Old Ontario than those grown in the clay belt last season. The extremely dry weather in July and August materially reduced the grain crops.

A settler's model house was erected on the Toronto Exhibition Grounds, from timber taken from Night Hawk and Frederickhouse lakes on the Frederickhouse river.

A very destructive forest fire swept over parts of Temiskaming district, resulting in a very great loss of life. Many of the settlers between Matheson and Cochrane lost all their belongings, buildings, farm stock and implements and crops. In point of lives lost in this fire, it is one of the most disastrous forest fires in the history of the Province. From an agricultural standpoint, in clearing up the lands and in improving the climatic conditions, good results will follow as it has done for many of the settlers more in clearing off their lands than they could accomplish in many years. I am glad to report that having travelled over the burnt over district after the fire, that the area burnt over and the loss of timber is not nearly

so great as was originally reported, and that this fire does not compare, in point of area burned and timber destroyed, with many of the earlier fires in the Province. This fire is more particularly described in the general report hereto attached.

The good results obtained from the different farm and garden plots and from the farms in general along the Grand Trunk Pacific railway and along the Temiskaming & Northern Ontario railway and its branches, has given to the settlers great encouragement this season, and has removed any doubt as to the future of this new district. All that is now lacking are settlers.

Good progress is still being made in the valley of the Rainy River, where there is still a considerable area of first-class lands waiting settlement.

The different mining camps now operating in the new districts are giving a ready market for all the grain and vegetables the farmers can produce.

The demand for new roads and more roads still continues.

Attached hereto are statements of expenditures for the year ending 31st October, 1916, in the various districts, and a summary of expenditure for the last five years.

I have the honour to be, Sir,

Your obedient servant,

J. F. Whitson,

Commissioner.

Statement of Expenditure Under Northern & Northwestern Ontario Development Acts, 1912, 1915 and 1916.

(From 23rd May, 1912 to 31st October, 1916.)

District.	Expenditure to 31st October, 1915.	Expenditure year ending 31st October, 1916.
District of Nipissing, North Bay to Mattawa, and east to Petawawa Military Camp, and south of Callander to South River, and west from North Bay through Sturgeon Falls	$270,244 73	$53,938 91
District of Temiskaming, Haileybury, Englehart, Matheson, Charlton, Swastika, Elk Lake, Larder Lake	395,871 16	92,116 78
District of Temiskaming, Cochrane, Porcupine, Iroquois Falls, and Transcontinental Railway from Quebec boundary west 125 miles to Groundhog	685,426 32	95,442 03
District of Sudbury, vicinity of the Town of Sudbury and Mining District surrounding	189,906 37	44,827 59
District of Algoma, vicinity of Hearst, along Transcontinental and Algoma Central Railways	84,314 32	18,041 31
District of Algoma, on Sudbury and Sault Ste. Marie Trunk Road	190,726 36	40,040 15
District of Thunder Bay, tributary to Port Arthur and Fort William	354,475 14	62,338 65
District of Kenora, vicinity of Kenora and Keewatin and Wabigoon	147,802 84	21,277 43
District of Rainy River, in Rainy River Valley	281,938 38	45,893 78
Algonquin Provincial Park	.....	14,391 27
Manitoulin Island	.....	9,269 30
Experimental Farm Plots	17,110 79	10,125 53

Seed Grain	98,920 26	24,916 63
General Administration Expenses	50,007 34	15,956 55
	$2,766,744 01	$548,575 91
Settlers' Loan Account		$26,370 98
	$2,766,744 01	$574,946 89

ARTHUR E. D. BRUCE,
Secretary and Accountant.

STATEMENT OF EXPENDITURE, YEAR ENDING 31ST OCTOBER, 1916.

The Making of Roads:			
Grigg, A., Deputy Minister, salary	$75 63		
Whitson, J. F., Commissioner, salary	4,500 00		
Bruce, A. E. D., Secretary and Accountant, salary	2,791 00		
Beardall, F. G., Clerk (on actice service) salary	1,605 18		
Dower, A. R., Clerk (on active service) salary	1,200 00		
Reid, A., Clerk (on active service) salary	916 33		
Extra Clerks	4,868 41		
		$15,956 55	
Wages	$296,042 54		
Contracts	49,525 28		
Supplies and equipment	152,009 38		
		497,577 20	
Advancement of Settlement and Colonization:			
Wages	$6,064 42		
Supplies, stock and equipment	4,061 11		
		10,125 53	
Seed Grain:			
Wages	666 32		
Seed grain, freight and expenses	24,250 31	24,916 63	
			$548,575 91
Settlers Loan Department:			
Dane, F., Commissioner, salary	$1,105 75		
Kennedy, W. K. P., Accountant, salary	552 88		
Crawford, G., Stenographer, salary	128 00		
Chester, Thos., Supervisor, salary	104 00		
		$1,890 63	
Net amount of loans issued	$23,889 69		
Expenses	590 66		
		24,480 35	
			$26,370 98
			$574,946 89

ARTHUR E. D. BRUCE,
Secretary and Accountant.

SUMMARY OF EXPENDITURE FOR THE FIVE YEARS ENDING 31ST OCTOBER, 1916.

Description.	Year ending 31st Oct., 1912.	Year ending 31st Oct., 1913.	Year ending 31st Oct., 1914.	Year ending 31st Oct., 1915.	Year ending 31st Oct., 1916.	Total Expenditure under each section.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Sec. 1 (a). Works and Improvements (Sewer at Hearst)	.....	.....	2,100 00	.....	.....	2,100 00
Sec. 1 (b). Roads	193,082 80	1,081,172 28	791,443 08	582,914 80	513,533 75	3,162,146 71
Sec. 1 (d). Farms	.....	.....	9,035 11	8,075 68	10,125 53	27,236 32
Seed Grain	.....	.....	.....	98,920 26	24,916 63	123,836 89
	193,082 80	1,081,172 28	802,578 19	689,910 74	548,575 91	3,315,319 92
Clause 1 (Amending Act-1916) Settlers Loan Account	.....	.....	.....	.....	26,370 98	26,370 98
Total Expenditure under all sections	193,082 80	1,081,172 28	802,578 19	689,910 74	574,946 89	3,341,690 90

ARTHUR E. D. BRUCE,

Secretary and Accountant.

NORTHERN DEVELOPMENT BRANCH.

SEED GRAIN.

Summary of Seed Grain supplied to Settlers, Year ending the 31st October, 1916.

Distribution Store.	District.	Oats.	Potatoes.	Clover.	Timothy.	No. Settlers Supplied.
		Bush.	Bush.	Lbs.	Lbs.	
Kenora	Kenora		61½	25	55	5
Dryden	"		814½	950	750	90
Port Arthur	Thunder Bay		627	1,275	1,300	76
Emo	Rainy River		1,234½	1,070	1,370	148
Sudbury	Sudbury	5,910	567	5,860	8,975	333
North Bay	Nipissing	53	10½	40	50	4
New Liskeard	Temiskaming	216	130½	615	445	37
Englehart	"	510	223½	390	740	65
Matheson	"	1,020	651	1,595	1,945	147
Cochrane	"	1,164	778½	1,635	3,140	192
		8,853	5,098½	13,455 or 224 15/60 bush.	18,770 or 391 2/15 bush.	1,097

ARTHUR E. D. BRUCE,
Secretary and Accountant.

NORTHERN DEVELOPMENT BRANCH.

SEED GRAIN.

Amount refunded by Settlers for Seed Grain supplied.

October 31st, 1915. By notes retired and Cash paid	$3,171 36
" 31st, 1916. " " "	29,320 00
Total paid to Prov. Treasurer, Refund Account	$32,491 36

ARTHUR E. D. BRUCE,
Secretary and Accountant.

RECORD OF CORRESPONDENCE.

For Year Ended 31st October, 1916.

Letters received	7,772
Letters and circulars mailed	16,349

ARTHUR E. D. BRUCE,
Secretary and Accountant.

DISTRICT OF KENORA.

New roads cut out and graded	21 miles
Old roads graded	11 miles
Old roads repaired	15 miles
Old roads gravelled	6 miles
Bridges constructed	23
Total number of miles under partial construction	53

In the District of Keewatin the work was continued throughout the season, beginning on the 1st of June to the last of October. The work was performed chiefly in the Agricultural sections north of Wabigoon and Dryden on the Canadian Pacific Railway, and extended northerly to the Grand Trunk Pacific Railway, in a section of the country which has been partially settled for several years, where the country is fairly good agricultural land—clay or clay loam. A few short roads were constructed or repaired north and north-west of Kenora in the sparsely settled townships.

In the District of Keewatin, as in other northern districts, the freshet and high water in April last damaged several of the old roads and bridges which had to be renewed or repaired. Labour was scarce and expensive, as well as provisions. Good results, however, were obtained by the money expended notwithstanding these difficulties. The work this season was done where it gave immediate results. Short roads were constructed or repaired in settlements where heretofore the school children had been unable to reach a school, and while there are still many instances where roads for schools are sadly in need, the greatest possible consideration has been given to such roads, considering the broken character of the country and the numerous small scattered settlements in the district.

ROADS IN THE DISTRICT OF RAINY RIVER.

Roads worked on 56 miles.

Number of miles of new road cut out only	3¾
Number of miles of new road grubbed only	¾
Number of miles of new road cut, grubbed and graded	10
Number of miles of new road cut and grubbed	1¾
Number of miles of new road grubbed and graded	7¼
Number of miles of corduroy laid	1¼
Number of miles of new road graded only	1¼
Number of miles of old road regraded	13¾
Number of miles of old road gravelled	20½
Number of miles of tap drain put in	1½
Number of bridges constructed	8
Number of culverts built	22
Number of miles of road dragged	75

The main roads worked on were, first, a road from the Town of Rainy River north to the Lake of the Woods. The road is now in such shape as to allow the settlers to drive to the Town of Rainy River during the summer months. Previous to this road being completed the settlers in the Township of Spohn were required to secure supplies in the summer season by boat and pack them to their homesteads. The land along this road through the Wild Lands Reserve has all recently been sold by the Department of Indian Affairs. The influx of settlers on these lands will greatly benefit the Town of Rainy River.

The gravelling of the trunk road from Rainy River Town to Fort Frances has been completed and where required, regravelled, giving the settlers 62 miles of continuous good gravelled road.

The main road north of Barwick has been gravelled this season a distance of 6 miles. The settlers now have 11 miles of gravelled road north of the Canadian Northern Railway.

North of Emo, 4 miles of the Carpenter and Dobie townline was gravelled. This is the main road leading north of Emo and it is desirable that the gravelling be continued on it further north through the settlement.

The old Colonization road between Little Forks and Fort Frances was graded for a distance of 7 miles and tap drains were dug where required; also, a mile and a half of this road was gravelled through the Indian Reserve. The remainder of this road requires gravelling as the traffic is very heavy.

The other roads worked on were short roads needed badly by the settlers.

The distribution of seed potatoes and grass seeds gave good results, as both the hay and potato crops throughout the district gave a good yield. The wheat and oat crop was very light.

ROADS IN THE DISTRICTS OF PORT ARTHUR AND FORT WILLIAM.

Number of miles of new road cut out and graded	27
Number of miles of old road regraded	14
Number of miles of old and new roads gravelled	17
Number of culverts constructed	215
Number of bridges constructed	5

Township of MacGregor:

North-east Branch Road—

This road was regraded and gravelled for 1½ miles and was continued through Lot 16, Concessions 2 and 3, a distance of 1¼ miles. The road was grubbed out, ditched, one-quarter mile stone and corduroy foundation laid, 32 culverts set, one bridge, on rock-filled cribs, of 22 foot span and with two approaches of 25 feet each, was erected over the Current River; the whole was graded and gravelled. This road is completed as far as present settlement warrants.

Township of Gorham:

Road between Lots 10 and 11:

This road was continued through Concessions 2, 3 and part of 4 to the valley of the Current River near Hazelwood Lake, a distance of 1½ miles. The road was cleared, grubbed, ditched, ½ mile stone and corduroy foundation laid, 14 culverts set, and the whole was graded and gravelled. This road is now completed through the very rough ground that isolated the settlers in the Current River Valley and also affords access to Hazelwood Lake, a source of water supply of the City of Port Arthur.

A view along the Port Arthur, Fort William and Duluth Highway.

Townships of Gorham and Ware:

Town Line—

This road was continued through Concessions 5 and 6 to the area of level lands surrounding Trout Lake, a distance of 2 miles. The road was cleared, grubbed, ditched, 3/4 of a mile of corduroy foundation laid, 7 culverts set, 1 bridge erected; the whole was graded and 1 1/2 miles were gravelled. The road is now completed as far as settlement warrants.

Township of Ware:

Road between Lots 10 and 11—

One mile of this road regraded and the road was continued 3 miles through Concessions 2, 3 and 4, and a branch road built between Concessions 3 and 4 to connect with roads west of Strawberry Creek and afford settlers there access to the Dawson Road. This road was cleared, grubbed, ditched, 1/2 mile of corduroy foundation laid, 27 culverts set, the whole graded and 1/4 mile of low-lying ground was gravelled. This road is completed as far as present settlement warrants.

Township of Paipoonge:

Arthur Street Road—

This road was gravelled and rolled by steam roller through Lots 1 to 10, and through Lots 14 to 24, in all a distance of 5 1/4 miles. This work was done early in the season; the increase in traffic induced has proved heavy for the sandy soiled roadbed through Lots 24 and 34 and this still requires re-surfacing with gravel.

Township of Conmee:

Blind Line Road, Concession 1—

This road commences at the bridge erected by this Branch across the Kaministiquia River at Kakabeka Falls, and runs north along the river bank to the "blind line" in Concession 1, thence west along that line. One and one-half miles of new road was cut out, grubbed, ditched and graded, 6 culverts set and 1 1/4 miles were gravelled. The road is completed to Lot 4, and requires to be continued to Lot 7, a distance of 2 miles.

Township of O'Connor:

Road between Concessions 6 and 7—

This road also commences at the above-mentioned bridge and runs west; and is completed as far as Lot 7. Two and one-quarter miles of this was grubbed, ditched and graded, 10 culverts were set and 1 bridge on piles erected. The road requires to be continued for 2 miles to accommodate settlers now there.

Township of Lybster:

Silver Mountain Road—

This road runs through Lots 5 to 10, in Concessions 4 and 5. Two and one-half miles of this road was regraded and the road continued, cleared, grubbed and ditched for 1½ miles further, 13 culverts set and ¼ mile of corduroy foundation laid. The road requires to be continued to Silver Mountain Station on the C. N. Ry., a further distance of about a mile.

Township of Pearson:

Road between Lots 20 and 21—

This road commences at the north limit of the township at the line between Lots 18 and 19, and runs south-westerly to the west limit of Lot 20, and then south

Graves Mountain, one of the many beautiful mountains on the Port Arthur, Fort William and Duluth Highway, Ontario; approximately about 800 feet above Lake Superior.

along that limit. Two and one-half miles of this road was grubbed, ditched and graded. ½ mile of corduroy foundation laid, 11 culverts set.

Tip Top Mine Road:

This road commences about 21½ miles west of Kashaboie Station on the C. N. Ry. (80 miles west of Port Arthur), and runs south-westerly 6½ miles to the Tip Top Copper Mine. A roadway had previously been partially constructed from the mine towards the railway.

A road was cut out commencing at the railway, thoroughly ditched and a corduroy foundation laid for 3 miles; this has since been continued by the Mining

Company and completed to the already constructed portion. The whole has been covered with earth and gravel by the Company, and a tramway laid from the railroad to the mine to enable the Company to ship their ore to the C. N. Ry.

Township of Blake, Crooks and Pardee:

Port Arthur and Duluth Highway—

Nine miles of this road was regraded, ditches deepened, slide banks removed, 4 culverts were set and 2 small bridges erected. The road was continued a distance of 7 miles to the Pigeon River (The International Boundary); it was cleared, grubbed, ditched, 91 culverts set, 2 miles stone and corduroy foundation laid; the whole was graded and 5 miles of gravelling was done.

It is 44 miles from Fort William to the Pigeon River by this road.

This road affords access to a large area of good lands in Pardee Township lying to the west of the Stuart Mining Location, which has been isolated because of the absence of a road through the latter. The valley of the Arrow River (still in the Crown) is also served by this road; this is also a large and promising section.

The Minnesota State Highway Commission has completed a road to connect with this road at the Pigeon River from Duluth, distant 157 miles, and as soon as an International bridge is erected, there is every reason to believe that there will be a large traffic, more particularly tourist traffic, as the road passes through Grand Marais one of the most attractive summer resorts on Lake Superior. There is also a large area of good agricultural lands already settled south of and adjacent to the boundary. The timber being cut in this section on both sides of the boundary is manufactured at Port Arthur.

SAULT STE. MARIE, SUDBURY, AND GOULAIS BAY TRUNK ROADS.

New roads cut out and graded	3 miles
New and old roads re-graded and surfaced with gravel	16 miles
Old roads re-surfaced with stone	5 miles
Old roads re-graded	15 miles
Old roads repaired	6 miles
Total miles under construction and repair	45

The spring freshets commencing about the 20th of April last and the heavy rains early in September did great damage to the roads in the Algoma and Sault Ste. Marie districts, washing out culverts and bridges, and in other ways damaging the roads. These damaged roads had to be repaired at considerable cost. Only a few miles of new road were constructed.

Goulais Bay Road or that locally known as the People's Road, near the Town of Sault Ste. Marie, was partly re-constructed. The old road was found to be almost impassable in places and owing to the heavy grades several long diversions around bad hills had to be made in ascending the mountain to the Goulais Bay Valley, where there is a considerable settlement. In places the old road was very stony and rocky, also narrow and undrained. The road has not yet been completed; owing to the wet weather in October it was found impossible to finish the work on all the diversions. Difficulty in getting labour also retarded progress. The road, as now located, when finished, will make a fairly good road, and will give to a great number of settlers an opportunity of marketing farm produce at all seasons of the year, as well as their timber.

The work done on the main trunk road from Sault Ste. Marie to Sudbury consisted chiefly in re-surfacing parts with gravel and stone, repairing sections damaged by the spring freshets and heavy rains of September, and in placing permanent culverts. This road is now almost finished, with the exception of the gravelling of a few miles between Dean Lake bridge and Missisaugi which was left because of the impossibility of obtaining gravel during the summer; the gravel being on the opposite side of the Missisaugi River, and can only be hauled during the winter season. There are also 2 bridges, one west of Blind River and the other across Ladouceurs Creek, to be re-constructed.

A view on the Algoma Central Railway, along Magpie River, between town of Sault Ste. Marie, Ont., and Hearst.

SUDBURY DISTRICT.

Number of miles of road gravelled	7
Number of miles of new road cut out	6
Number of miles of new road graded	1
Number of miles of road repaired in places	40

The Dill Township road was graded for a distance of one mile.

The road from Sudbury to Long Lake in the Townships of McKim and Broder was re-graded for a distance of 3½ miles.

The Sudbury and Murray Mine stone road was repaired and re-graded in places for a distance of 4 miles.

The Blezard Valley trunk road from Scoble Crossing north through the Township of McKim and Blezard for a distance of 1 mile was repaired.

The Levack Township mining road was re-constructed and repaired for a

distance of 3½ miles. This road was originally constructed a year ago and was destroyed by the spring freshet, caused by the breaking of the dam at the foot of Onaping Lake. The old bridge across the Onaping River was carried away with the flood and is now being renewed.

The Shining Tree mining road, which was built two years ago by this Department, was partially destroyed by fire a year ago. The same was repaired, and 6 miles of new winter road cut out from the end of the old road cut two years ago north-easterly to the mines at Wasabika Lake. The road begins at Kashbaw Station on the Canadian Northern Railway, and runs in a north-easterly direction for 24 miles. The first 18 miles was constructed two years ago and was repaired, and a winter road only cut out for the balance of the distance.

SUDBURY AND NORTH BAY TRUNK ROAD.

Number of miles of road under construction	29½
Number of miles of new road constructed	15
Number of miles of new road cut out and graded	6
Number of miles of road macadamized	8½
Number of culverts built	60
Number of small bridges under construction	2

Five years ago a trunk road was constructed between Sudbury and the Village of Coniston, near the Mond Nickel Company's nickel and copper smelters and mines. The original road was well graded and drained, and, although well constructed, was chiefly of clay or light loam, and owing to the heavy traffic between Sudbury and the Village of Coniston, did not withstand the heavy traffic. During the wet weather it rutted to such an extent that in places it was almost impassable and it was necessary to re-surface it with rock. Early in May the stone crusher was set at work and operations were carried on during the entire season. The road is now completed, the distance being 8½ miles. It was first re-graded, a few additional culverts placed, and 10,855 cubic yards of rock was crushed and put in place. The traction engine and large rock wagons were used in hauling the road material. The road was well rolled with a ten ton roller during construction and is now in first-class condition. The width of the rock surface is 9 feet.

The continuation of this trunk road east of Coniston to Wahnapitae, a distance of 4 miles, as constructed a year ago by this Department, was re-surfaced with gravel as far as Wahnapitae Station.

Early in June work was commenced on the continuation of the Sudbury and North Bay trunk road from Wahnapitae easterly to a point on the Canadian Pacific Railway 3 miles west of the Village of Warren, a distance of 21 miles, where work terminated in 1915 on the construction of the same road from North Bay west: the distance covered this season being 29½ miles. The first 6 miles east of Wahnapitae was cut out, grubbed and graded: the next 6 miles to the Village of Markstay was cut and grubbed only. There is now a good winter road from Sudbury to Markstay. Heretofore the settlers from Markstay were unable to reach a market either to the east or west. From Markstay easterly the road followed the old Colonization road for about 2½ miles north of the right-of-way of the Canadian Pacific Railway. The road then turned to the south, crossing the right-of-way, and was extended in a general direction parallel to the right-of-way to the end of the road as constructed a year ago 3 miles west of Warren. The road from Markstay to Warren has all been

graded, but in places requires surfacing with gravel. There is now a well graded road from Markstay to North Bay, 55 miles, which requires, however, surfacing with gravel in a few places west of Warren; there is now a winter road from North Bay to Sudbury, 80 miles, 6 miles of which still remains ungraded with 2 small bridges to be renewed.

The road between Warren and North Bay, which was finished a year ago, was improved by running a small grader over it in places where it had become slightly rutted. When the 6 miles of this road which is now ready for grading is finished, the settlers between North Bay and Sudbury will be able to market their produce either at Sudbury or North Bay, thus fulfilling a long felt want. Many of these settlers have been in occupation on their lots for nearly thirty years without being able to reach a market, more particularly those east and west of Markstay.

ROADS IN THE VICINITY OF NORTH BAY.

Township of Chisholm:

The Township of Chisholm Trunk Road commenced in 1915 was continued along Lots 5 and 6 of the said road a distance of 3¼ miles. The road was cut out and graded and the surface was gravelled.

Township of Widdifield:

The road in front of Lot 16, Con. 2, Township of Widdifield, was surfaced with gravel for a distance of ½ mile.

NORTH BAY, CALLANDER AND POWASSAN TRUNK ROAD.

Total number of miles reconstructed, graded and surfaced with gravel in places ..... 24 miles

From the Village of Powassan, which is about 20 miles south of North Bay, work was begun on the North Bay, Callander and Powassan Trunk Road last May and continued up to the last of October when operations ceased at the Village of South River 20¾ miles south of Powassan. Between these two villages there was an old road built at different periods. There was very little through traffic over the road, it being almost impassable in places owing to bad grades, stony hills, and swamps. During the wet season traffic was completely stopped between South River and Trout Creek, the distance between these two villages being 8¼ miles. In order to improve the grades several deviations had to be made from the old road to avoid almost impossible hills on the 11th and 12 Concessions of the Township of Laurier. At this point about 2 miles of new road had to be cut out. The road as now constructed has very few heavy grades and from North Bay to South River there is a first-class road considering the character of the country it passes through. There are, however, a few places which still require gravelling and regrading later on. After the road leaves Powassan, in the Township of Himsworth, it runs in a south-westerly direction passing through the Village of Trout Creek, near the north limit of the Township of Laurier and extends in a south-westerly direction through

the last named township and the Township of Machar, a distance of 20¾ miles. The country passed through is generally rough and rocky in places, although there is a fair percentage of good agricultural land. The farmers in many instances have good buildings and land in a fair state of cultivation. Large sections of country are still covered with timber, chiefly hardwood.

The distance from South River to North Bay is a little over 40 miles and can be covered by an automobile in two hours. The road constructed this season will still require to be re-surfaced in a few places. The road will give the settlers what they have long required, access to the leading local markets, North Bay, Callander and Powassan, at all seasons of the year.

This Trunk Road when improved as far as Burk's Falls, a further distance of 20 miles, would constitute an excellent highway between North Bay and Bracebridge.

NORTH BAY AND MATTAWA TRUNK ROAD.

Twenty miles repaired.

The Trunk Road between Callander and Mattawa was constructed three years ago, was re-surfaced with gravel in places for 7 miles, and run over with the road drag for 20 miles in the Townships of Ferris, Bonfield, and Calvin.

PEMBROKE AND MATTAWA TRUNK ROAD.

During the winter of 1915-16, after finishing the surfacing and gravelling of the trunk road between the Military Camps at Petawawa and the Town of Pembroke, work was commenced in November, 1915, and continued throughout the winter season, in filling the eastern approach to the new bridge across the Petawawa River at the eastern entrance to the Petawawa Military Camps. Approximately 15,000 cubic yards of gravel and stone were required in this work. The road from the Military Camps to Pembroke is now in first-class condition.

ROADS IN THE ALGONQUIN PROVINCIAL PARK, DISTRICT OF NIPISSING.

Minesing Road, partly cut out, ditched and graded ..... 10 miles
Nominigan Road, partly cut out, ditched and graded ..... 7 miles

From Algonquin Park Station, on the Canada Atlantic Branch of the Grand Trunk Railway, in the Algonquin Provincial Park, two roads as above named were partly constructed and improved. Both start from the railway station near the headquarters of the Park Ranger and the Highland Inn, one of the railway company's beautiful summer resorts.

The Minesing Road winds its way over the hardwood ridges and through the valleys in a northerly direction for a distance of over 11 miles to the south-west shore of Island Lake, where the railway company has erected several fine summer resorts. The lake is one of the finest in the Park and is situated at the head waters of three important rivers, the Muskoka, Madawaska and Petawawa, at an elevation

of 1,600 feet above sea level. On this road 30 culverts were built, and two small bridges, with 44 and 40 feet span, constructed across Beaver and Polly Creeks.

Nominigan Road starts from the same station branching off the Minesing Road about a mile from the railway station and runs in a north-westerly direction to the outlet of Source Lake, where it crosses the Grand Trunk Railway to the south side, and then runs in a westerly direction to the east shore of Smoke Lake, near the source of the Muskoka River, where the Grand Trunk Railway Company has constructed and is operating several beautiful summer resorts. The distance from the railway station to the Nominigan Camps by the road is about 8 miles, on which 25 culverts and one bridge, 38 feet in length, were constructed.

The country passed through by these roads is rolling and rocky, mountainous in

Grand Trunk summer resorts. The end of the Minesing Road, Algonquin Provincial Park.

places. From an agricultural point of view it has little or no value. The soil, where there is any, is light sandy loam with small areas of clay soil in the swamps and sand on the ridges. Unfortunately no gravel suitable for road purposes was to be found along the road, the only road material being a light loam and rock.

The land is well timbered with large birch, maple, ironwood and hemlock, with here and there, along the shores of the numerous lakes, groves of small pine, and on the high lands an occasional large white pine, the remains of the original pine forest which has been cut off.

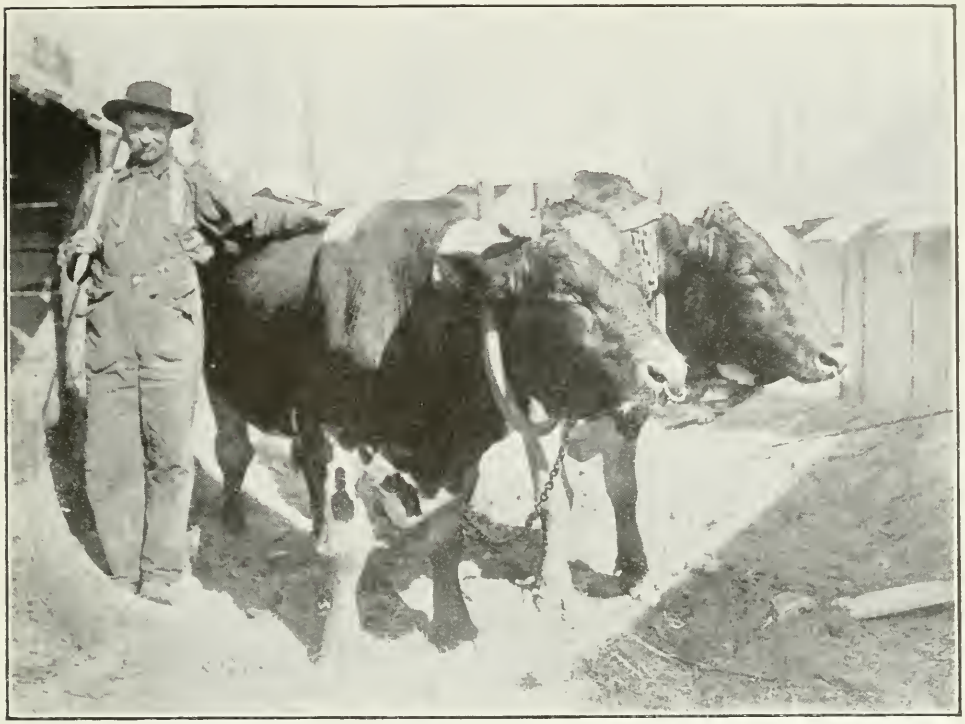
A narrow wagon road had originally been cut out by the railway company. It was widened to a width of from 24 to 30 feet, graded with the best material available and well ditched, and is at present suitable for the traffic.

A field of wheat (first crop), on the Stewart Farm, near Earlton, on the Temiskaming & Northern Ontario Railway.

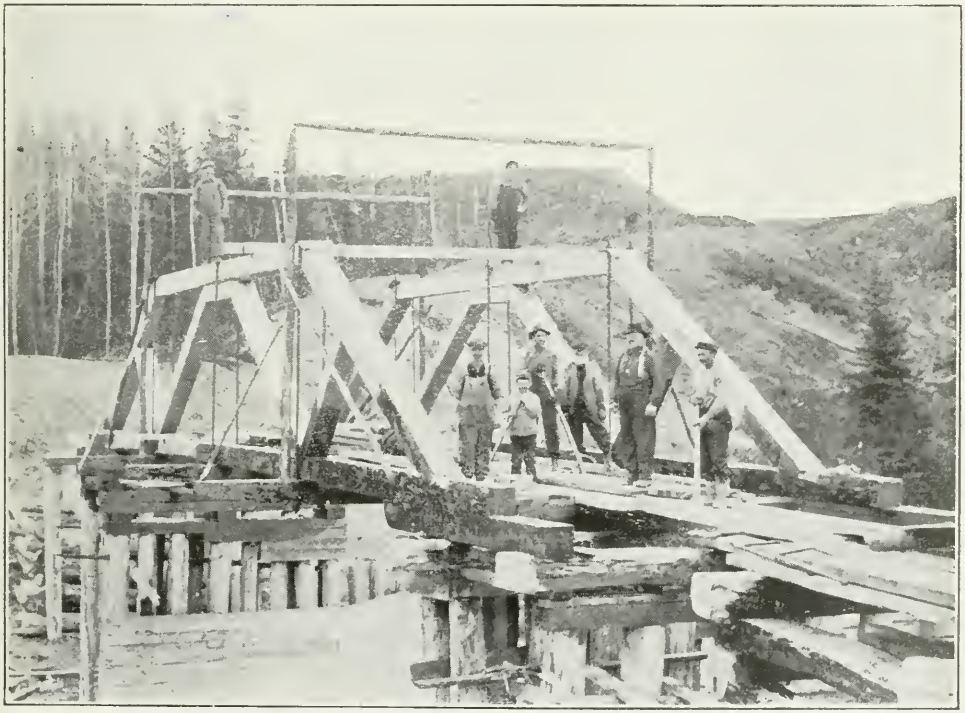
Sheep farming, west of Englehart, in the District of Temiskaming.

A field of barley in the Township of Dack, Temiskaming & Northern Ontario Railway.

A settler's home in Marter Township, Temiskaming & Northern Ontario Railway, showing field of barley.



A settler's first team, Township of Evanturel, near Englehart, Temiskaming & Northern Ontario Railway.



Constructing a bridge across the Blanche River, near Englehart, Temiskaming & Northern Ontario Railway.

ROADS IN THE VICINITY OF ENGLEHART, TOMSTOWN, BRENTHA, LONG LAKE, AND CHARLTON.

Number of miles newly graded road with new culverts	26
Number of miles road, regraded with repaired culverts	59
Number of miles road cut and burnt only	9
Number of miles road stumped ready for grader	5
Number of bridges built	6

In the section north and south of Englehart, along the T. & N. O. Rly., south-east to Tomstown, west to Charlton, and along the north-east shore of Long Lake, and south-west of Brentha, considerable damage was done to the roads, culverts, and bridges by the early spring floods. An unusual depth of snow fell during the winter of 1915-16—in places from four to five feet in depth, followed by heavy spring rains and a sudden thaw about the middle of April. The water rose in the Blanche River nearly 20 feet in five days. Many of the old bridges and culverts, as well as a few of the new ones, were washed out. Ditches and roads were destroyed which had all to be renewed at considerable cost. Labour was difficult to procure and expensive.

Fairly good results, however, were obtained for the money expended. Crops throughout this district were fine, especially hay and clover. Grain crops would have yielded well had it not been for the extremely dry weather during the latter part of July and the first two weeks in August, which caused the grain to ripen too rapidly.

Great progress is being made by the settlers in this district, both in clearing land and in erecting good buildings. Little damage was done in this section by forest fires last season, although considerable small areas were burnt over.

ROADS AND BRIDGES CONSTRUCTED AND REPAIRED IN THE VICINITY OF MATHESON, AND THE MINING DISTRICT OF KIRKLAND LAKE, MUNRO AND LARDER LAKE, DISTRICT OF TEMISKAMING.

Number of miles of road repaired	47
Number of miles of new road cut	2½
Number of miles of road gravelled	6
Number of miles of road re-surfaced with stone	3
Number of miles of road graded	10
Number of bridges constructed	5
Number of bridges repaired	8

During the winter of 1915-16 work was continued on the eastern part of the trunk road from the Town of Matheson to the gold mines in Township of Munro: 5 miles of the road graded the previous season was surfaced with gravel, part along the south boundaries of the Townships of Beatty and Munro.

During the summer season work was performed in the Townships of Hislop, Beatty, Bowman, Carr, Currie, Taylor, Walker, Clergue, Stock and Bond. Also, the trunk road from Swastika to the Kirkland Lake mining district was re-surfaced with rock for a distance of 3 miles. The old road from Dane Station, on the Temiskaming and Northern Ontario Railway, to the mines operating in the vicinity of Larder Lake, a distance of 18 miles, was repaired in places and several old bridges and culverts renewed. The work in the above-mentioned townships consisted chiefly in grading, re-grading and in other ways improving old roads cut out during

A typical settler's home in the Township of Evanturel, Temiskaming & Northern Ontario Railway.

Harvesting rye along the Temiskaming & Northern Ontario Railway.

the last five years. Owing to the spring freshets and the forest fires, which swept over the greater portion of the townships in the neighbourhood of Matheson during the latter part of July and the fore part of August, most of the culverts, small bridges and a couple of large bridges were destroyed by fire, and much of the corduroy roads burned over. Immediately after the fire, work was begun in repairing the damage done. This occupied nearly all the time from August to the end of the season and cost considerable. Most of the timber suitable for culverts was burned and permanent corrugated iron culverts had to be procured; 140 of these were secured and the greater number of them have been placed. A few of the smaller bridges have been re-constructed and work is now under way constructing two of the larger bridges burned out.

The heavy freshets during the month of April, as in other sections of the district, did great injury to many of the clay roads, which had to be re-graded. Labour was hard to procure and expensive. Several of the proposed new roads had to be abandoned. The results obtained in this district, owing to the great losses by fire, in the construction of new roads this season have not been entirely what was hoped for or expected.

The warehouses, office and stables at Matheson were completely destroyed, along with considerable camp equipage and supplies. These, however, were partially covered by insurance. They have since been re-constructed.

Fifty acres of land on the north part of Lot 4, Concession 6, Bowman Township, was cleared, stumped, fenced and plowed and about 30 acres of it put under cultivation as an Experimental Farm. The results were very satisfactory.

PORCUPINE MINING SECTION.

Total number of miles of road under construction	18	miles
New roads constructed and graded	5½	miles
Old roads graded	7¼	miles
Roads re-surfaced with stone	5¼	miles

The Trunk Road between Golden City and Mattagami River, which passes through South Porcupine and Timmins, over which there is a great deal of heavy traffic between the mines, was re-surfaced with rock for 2½ miles and with gravel for 1½ miles.

A new road starting from the Trunk Road at the Mattagami River was cut out and graded north along the easterly bank of the river to Concession 2, Township of Mountjoy for 1½ miles, to accommodate the farmers along the river.

The road between the Townships of Tisdale and Mountjoy, and between the Townships of Delora and Ogden from the Town of Timmins to the Hayden Mine, 3¾ miles was widened, grubbed and graded. One bridge, 26 foot span, was reconstructed and part of the road surfaced with gravel.

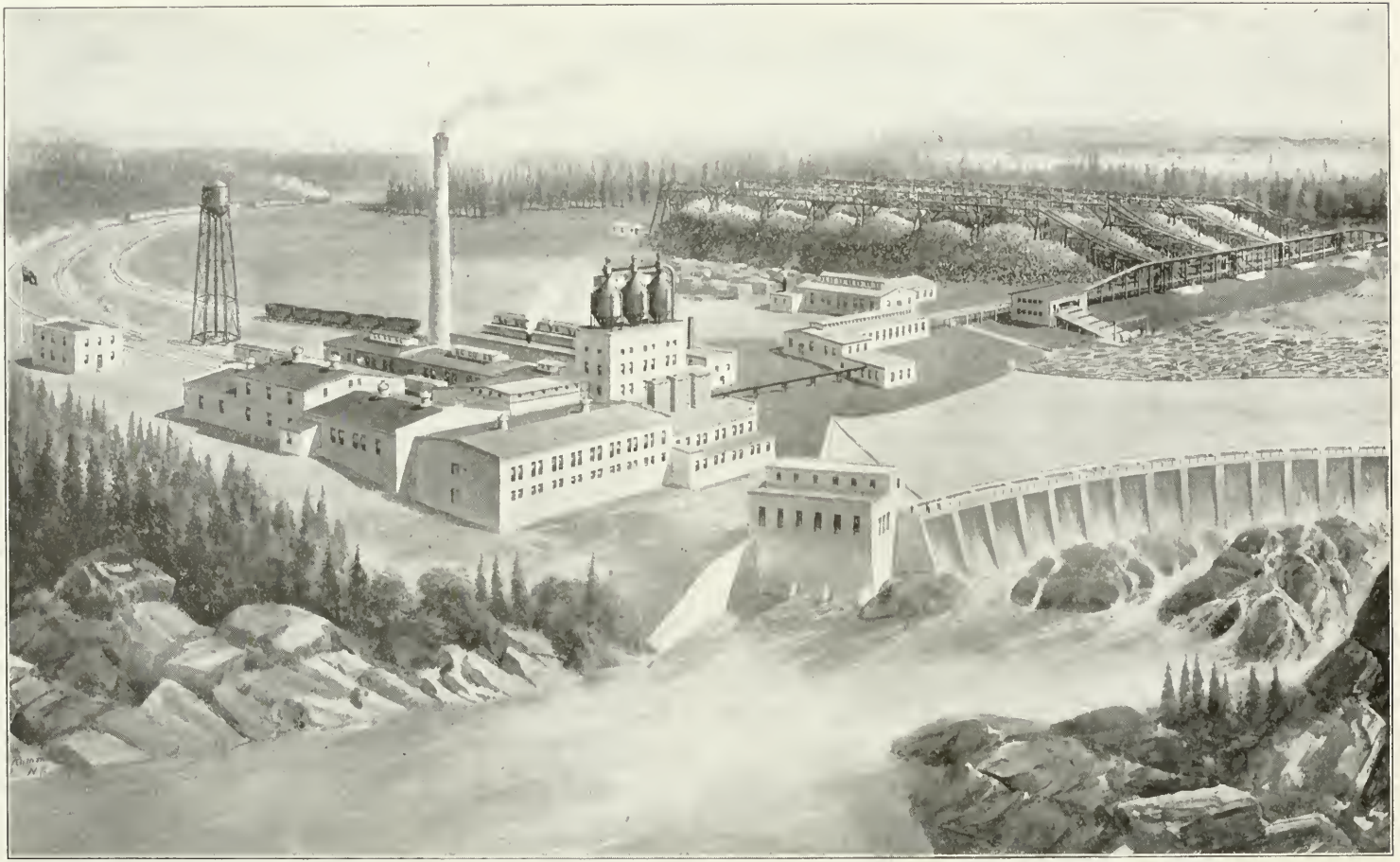
A road from the T. & N. O. Rly. crossing at the Town of Timmins to the Vipond Mine was grubbed, graded and surfaced with crushed rock from the mines for a distance of 1 mile.

A road from South Porcupine to the Crown Chartered Mine and other mines along the boundary between Tisdale and Whitney, was repaired and graded for a distance of 3 miles.

A branch road from the Trunk Road, between Golden City and South Porcu-

Trunk road, Timmins to South Porcupine, re-surfaced with rock this season (1916).

Road from the Hayden Mine to the town of Timmins, under construction 1916.



Plan of the Mattagami Pulp & Paper Co., Ltd., proposed pulp and paper mills now under construction at Smooth Rock Falls, on the Mattagami River, 30 miles west of the Town of Cochrane, Transcontinental Railway. Capacity of first unit, 150 tons sulphite fibre; hydraulic development at 45-foot head, 9,000 h.p. A spur line has been constructed from the Transcontinental Railway, north 3½ miles to the mills.

pine to Dead Man's Point on Porcupine Lake near the public cemetery, was graded for ½ mile and gravelled ¼ mile.

The road from Golden City to Pottsville, which had been damaged by the spring freshet, was re-surfaced with rock for ¼ mile.

The road cut out last season in the Township of Mountjoy, west of the Mattagami River, was graded, commencing on the west side opposite the main Trunk Road, through Mattagami Heights running in a north-westerly direction across Lots 1 and 2 to the 3rd Concession line, thence west along said concession line for a distance of 2 miles, a distance of 3¼ miles in all. Six culverts were placed and one bridge 52 feet long was constructed.

WORK DONE IN THE DISTRICT OF COCHRANE, ALONG THE LINE OF THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY SOUTH TO PORQUIS JUNCTION, WEST ALONG THE PORCUPINE BRANCH OF THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY, EAST ALONG THE BRANCH TO THE ABITIBI RIVER, AND ALONG THE TRANSCONTINENTAL RAILWAY EAST TO THE ABITIBI RIVER AND WEST TO THE TOWN OF HEARST.

Total number of miles of roads, old and new, under construction	129
Number of miles of roads under construction and repaired	57
Number of miles of new roads cut out	10
Number of miles of old roads burned	7½
Number of miles of roads stumped ready for grading	21½
Number of miles of roads ditched	18
Number of miles of roads, old and new, graded	15
Number of bridges built	15
Number of culverts built and renewed	146

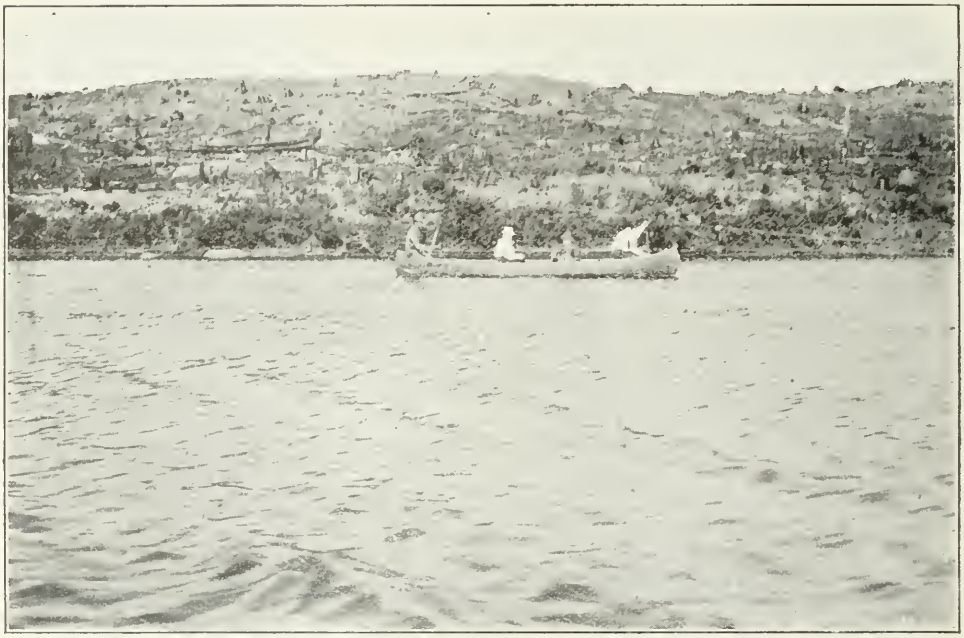
The work performed in the Cochrane District consisted chiefly in completing roads which had been cut out in previous years; the work extended over 129 miles, of which 10 miles of new road was cut out this season. The early spring floods and the fires of July and August did great damage to the roads in this district. Several of the old bridges and culverts were washed out, including part of the new bridge and dam at Connaught on the Frederickhouse River. More than 100 culverts were destroyed in the recent fire and several small bridges, also many miles of corduroy roads. On the most important roads the culverts and bridges have been renewed, and where the corduroy was burnt out it has been removed and the roads re-graded. Good results were obtained for the money spent, although labour was hard to procure and expensive.

The fire of July 29th destroyed the two store-houses at Cochrane, in which there was considerable road plant and provisions. The buildings were insured and the loss was not very great. The warehouses were rebuilt.

A ferry was constructed across the Mattagami River west of the Town of Timmins. Several short roads were constructed in different parts to enable the school children to reach the nearest schools. Where the corduroy was burnt out on the old roads ditches had to be enlarged. Fifteen new wooden bridges were constructed and 146 culverts, of which 40 were of corrugated iron.

Splendid results have been obtained from the experimental gardens and farm

plots at Cochrane, Ground Hog, Kapuskasing, Hearst and Nagagami, 10 miles west of Hearst. Very good progress is being made along the Grand Trunk Pacific Railway and along the Temiskaming and Northern Ontario Railway and its branches, in clearing up land by the settlers. The crops throughout the district were in most places very good, more especially timothy, clover, fall wheat, also vegetables and root crops. Crops planted in reasonable time did not suffer from summer frosts. The late crops, owing to the extremely hot weather in the latter part of July and fore part of August, ripened too quickly and did not yield as well as was expected. Potatoes and all kinds of vegetables yielded well. Great improvement has been noticed in the climatic conditions where large areas of land have been cleared or burnt off.



The Hon. G. H. Ferguson, Minister of Lands, Forests and Mines, on a visit to the Mattagami Pulp and Paper Mills, Mattagami River, Transcontinental Railway.

KAPUSKASING, INTERNED ALIENS CAMP, TRANSCONTINENTAL RAILWAY, SEVENTY MILES WEST OF COCHRANE, DISTRICT OF TIMISKAMING.

During the winter of 1915-1916 work was continued along the right-of-way of the Grand Trunk Pacific Railway east and west of the Kapuskasing River where is situated the Interned Aliens Camp and the Experimental Farm of the Department of Agriculture at Ottawa. The work consisted in the cutting and burning of all the timber on both sides of the right-of-way for a depth of 10 chains, or approximately 25 acres on each lot. The report of 1915 gives a detailed description of what had actually been done at the end of October 31st, 1915. Since that date 600 acres have been cut out and burnt over. About 5 acres on the east side of the Kapuskasing River was ploughed and put under crop. The land was burnt over

and ploughed early in May and sown about the latter part of May. The crops sown about the first of June did not mature as they were caught by the frosts in September. Potatoes and vegetables, however, that were planted early in the season gave a first-class yield. On the east side of the river where the crops were sown early, splendid results were obtained. The soil in this section of the country is a rich clay and clay loam. In the immediate vicinity of the Dominion Experimental Farm there is approximately 1,000 acres clear and burnt over, and along the right-of-way east and west of the river there is an additional 600 acres of lands of the Crown. This land was well burnt during the dry season; great care was

A typical view on the banks of the Kapuskasing River, Transcontinental Railway.

taken and no damage was done to timber outside the limits of the cleared area. About the middle of May the interned aliens refused to work and after that date no further work was done in clearing land. A small sawmill was erected on the Kapuskasing River and the merchantable timber taken out during the process of clearing was sawed into lumber. Part of the foundation for a bridge across the river was constructed. The Agricultural Department at Ottawa have now large farm buildings constructed and a large area of land ploughed ready for a crop. This section of the country has now every appearance of becoming one of the best agricultural sections along the Transcontinental Railway in the Clay Belt.

ROADS ON MANITOULIN ISLAND.

Grading and Repairing, 1916.

Number of miles of road graded and surfaced with gravel, 8⅝.
One bridge constructed.
Eight stone and 24 corrugated iron culverts placed.

The main trunk road on Manitoulin Island is constructed between Little Current and Gore Bay, the distance being about 40 miles. The easterly portion of this road from Little Current westerly for 10 miles is in very fair condition, most of it having been surfaced with gravel and well graded and ditched, although in a few places the road had been constructed too narrow.

Operations were commenced early in May about 12 miles west of Little Current and continued the work westerly for a distance of over 7⅛ miles to West Bay, and from that point south towards Mindemoya, a further distance of 1½ miles. The road, previous to my starting work, had in places been constructed too narrow; it was badly drained and in places had not been graded. The road was widened well ditched and surfaced with gravel. Part of the road from West Bay south to Mindemoya was only a mere trail and had to be cut out. There is now a first-class gravel road between Mindemoya, West Bay and Little Current, the distance being approximately 20 miles. There is a great deal of traffic over this road, it being the main trunk road on the Island. The continuation of this trunk road west of West Bay to Gore Bay requires to be re-graded and re-surfaced in places, and continued southerly along the east shore of Mindemoya Lake, the Mindemoya Road being the main trunk road running north and south across the Island. These roads pass through a fairly good agricultural country in a good state of cultivation. The country, although rocky and swampy in places, is well adapted for agriculture. Part of the road was difficult to improve owing to the narrow road as originally constructed and the number of small surface boulders met with. Good gravel, however, was plentiful and no difficulty was met with in making a good permanent road. Where drainage was required corrugated iron or stone culverts were placed where no timber was available.

EXPERIMENTAL FARM AND GARDEN PLOTS.

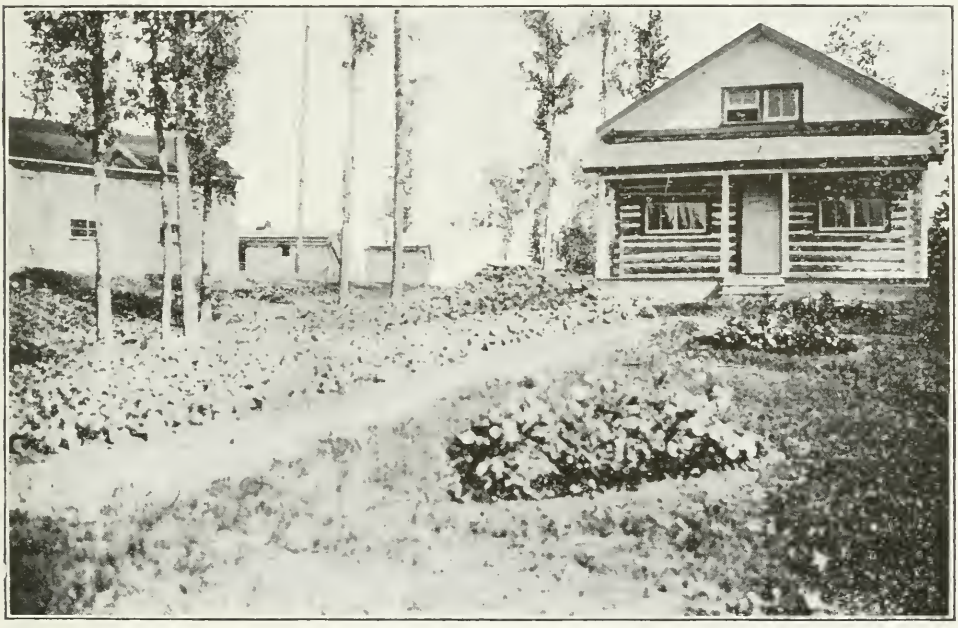
Matheson Experimental Farm Plot:

This farm is situated near Matheson on the north half of Lot 4, Concession 6, Township of Bowman, along the line of the Temiskaming and Northern Ontario Railway. Fifty acres of this lot was cleared early last spring and about 30 acres put under crop. All kinds of grain, as well as different kinds of vegetables, were tested with good results. The land had been burned over several years ago and was easily cleared. The greater portion of it is high and rolling; part, however, is low and covered with considerable black loam. The land was plowed as soon as the snow disappeared, and planted between the 10th and 24th of May. The fires of July and August which swept over the Matheson district did considerable damage to the crops. Except, however, where damage by the fire had been done, the crops were of first-class quality and matured without injury by summer frosts. Different varieties of spring wheat were sown, the Marquis, however, gave the best results.

Different varieties of peas were also sown and all matured. The barley, oats and flax were likewise a good crop and would have given a heavy yield had it not been for the extremely hot dry weather during the latter part of July and the first two weeks in August. The grain ripened very fast and was not as well filled as was expected. About 40 acres of land was plowed last fall and 8 acres of it sown in fall wheat.

Cochrane Garden:

The garden plot at the headquarters at Cochrane and the farm about one mile west of Cochrane were planted as in previous years and gave excellent results. Strawberries, early corn, beans, celery, potatoes, turnips, etc., yielded well, also all kinds of grain. Fall wheat gave 43 bus. per acre; spring wheat 30 bus. per acre.



Flower and vegetable garden at headquarters of Northern Development Branch, Cochrane.

Three varieties of spring wheat were sown on the 27th of April on fall plowed land and were harvested on 12th of August. Barley gave a good yield. Different varieties of oats were sown: the Siberian and Banner oats appeared to give the best results.

As this land is high and had been cultivated for two previous seasons no injury was done by summer frosts.

From the three years' experience with our experimental farms and very careful observations during the last five years, it would appear that it is necessary to plow the land in the fall of the year so as to be prepared to sow the seed at the earliest opportunity after the snow disappears in the spring. By so doing I find that there is little risk of summer frosts unless the land is low and undrained.

At Kapuskasing River, 70 miles west of Hearst, where the Dominion Government has established an experimental farm, a few acres were sown in oats, peas, barley, wheat and potatoes. These were sown about the 20th May and gave ex-

At Cochrane Experimental Garden, showing clover and peas.

A field of rye at Hearst, Ont.

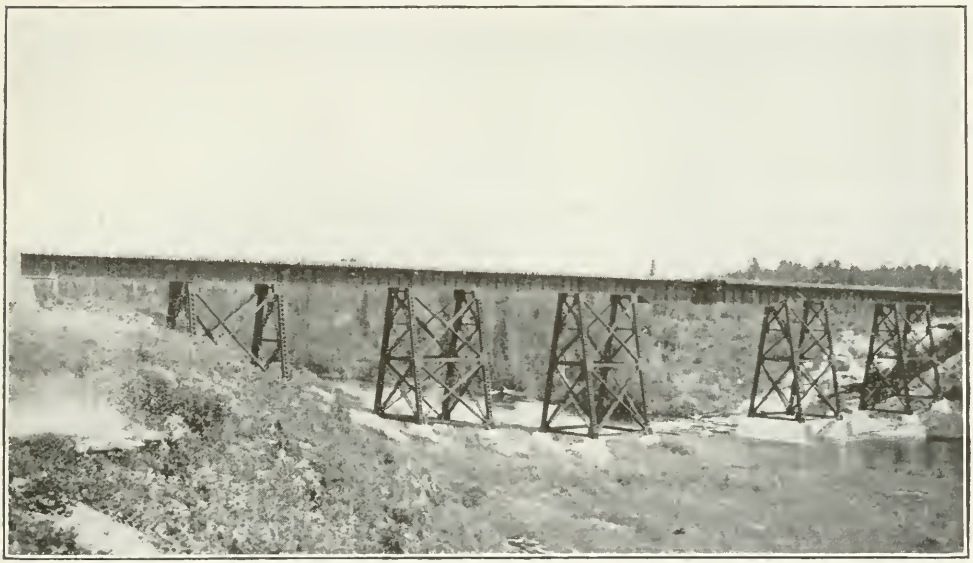
cellent results. The land was burned off in the early part of May and received little or no cultivation. Crops on the opposite side of the river, sown on the Dominion Experimental Farm, gave splendid results.

At Hearst the timothy and clover was an excellent crop. The grain crop, however, was light owing to the extremely dry weather.

At Nagagami, where the soil is a light clay or clay loam, excellent crops were produced, more particularly in potatoes, corn and other vegetables. Tomatoes ripened on the bank of the river and were a splendid crop. Clover and timothy grew in great abundance.

Throughout the entire district very little damage was done by the summer frosts, except on the low lying lands where the sub-soil was covered with considerable black loam. The high lands were comparatively free from any damage and the crops in general were as good as the crops in Old Ontario.

Timothy and clover throughout the district yielded from 3 to 3½ tons per



A view of Nagagami River, Transcontinental Railway, 40 miles west of Hearst.

acre. Two crops of clover were cut; the second crop of red clover yielding 1¼ to 1½ tons per acre. From the splendid growth of clover throughout the Clay Belt last season there is every appearance that the farmers in the Clay Belt will find it very profitable to grow clover seed. Where alfalfa was tested the results were very favourable.

Ground Hog Experimental Farm and Garden:

At Ground Hog, 50 miles west of Cochrane, on the experimental garden on the bank of the river and on the experimental farm about 2 miles west of the river, the results were very favourable. The following is a general report of the results obtained. On these plots more attention was given than on the before-mentioned plots:

Fall Wheat.—Three varieties of fall wheat were sown. These were Dawson's Golden Chaff, Imperial Amber and Grand Prize; the different varieties were grown

side by side, sown on September 4th and cut on August 10th. Dawson's Golden Chaff straw had a length of 3 ft. 4 in. and yielded 30 bus. per acre. Imperial Amber had a length of 3 ft. 9 in. and yielded 32 bus. per acre. Grand Prize had a length of 3 ft. 6 in. and yielded 45 bus. per acre. The grain was bright in colour, a good size and plump.

Spring Wheat.—Three varieties were tried, namely, Marquis, Prelude and Wild Goose. All were sown on April 29th on fall plowed soil. The Marquis and Wild Goose varieties were harvested on the 20th August; Prelude ripened almost two weeks earlier. It is a small headed wheat and a light yielder. Neither varieties were touched with summer frosts.

Barley.—Barley yielded exceptionally well. The grain was particularly bright and plump and weighs well. From 1½ acres we thrashed 75 bus. of barley. It was sown on May 26th and harvested August 20th.

Peas.—A plot of Improved Crown Peas were sown on May 26th and harvested on August 26th without damage from frost. One plot of Golden Vine Peas went so much to straw that they were caught by the frost before ripening. Peas where sown with a mixture of oats yielded 55 bus. per acre.

Oats.—Different varieties of oats were sown, namely, O.A.C. No. 3, O.A.C. No. 72, Siberian, Banner, Rennie's Early Yielder and Ligawa, on May 26th and all harvested before the first frost. The O.A.C. No. 3 and No. 72 were the heavier yielders. The Siberian gave a splendid yield, while the Early Yielder was the lightest. The average yield for the entire crop was about 45 bus. per acre.

Clover.—Red clover made a remarkable showing and gave a heavy yield of cured hay. From one acre of pure red clover the first cutting gave a yield of 2 tons 600 lbs. of cured hay. One-half acre was set aside to procure seed from; the sample of seed is good. The second cut of clover gave a yield of 1 ton 400 lbs. of cured hay.

Alfalfa.—A plot of alfalfa seeded on June 1st attained a length of 14 inches during the season.

Roots.—The turnips and mangel crop was the best in our experience. The soil was plowed in the fall and manured in the fall as well, when possible. Good spring cultivation and early planting is found to give the best results. The mangels were sown on May 24th, turnips on May 24th, June 1st, June 8th and June 13th. The turnips sown on May 24th gave the heaviest yield and special mention might be made of the Holborn, Kangaroo, Swede and the hardy Prize Winning Swede turnips.

Potatoes.—The potato ground was plowed in the fall and well worked up in the spring. Just as soon as the soil has sufficient warmth in the spring planting commenced and is continued at intervals, as a rule from May 24th until June 20th. During the past three seasons our first planting was made on May 20th. Planting on this early date has never been interrupted by the frost. During the season of 1916 we planted at late as June 27th and a yield of 226 bus. per acre was obtained.

Irish Cobbler gave a yield of 280 bus. per acre; Green Mountain, 236 bus. per acre; Carman No. 1, 240 bus. per acre; Puritan, 246 bus. per acre.

Carrots, Parsnips and Beets.—These three vegetables gave a heavy yield and were of first quality, the carrots being particularly good.

Celery.—Celery did remarkably well during the present season and by planting out healthy plants with a strong clean root system this plant is a profitable one for any settler to grow.

Production of Seed.—A quantity of good turnip seed was produced on the farm in 1915. This was sown in 1916 with the seed showing good vitality and producing a heavy crop.

Small Fruits.—The season of 1916 was very favourable for the production of strawberries, red raspberries, red and black currants.

With some attention and care at the necessary time a settler would be well repaid for the labour expended.

Throughout the northern district there is a growing demand for a better class of live stock. At the Ground Hog Farm the Department has secured a few thoroughbred pigs, cattle, sheep and poultry which are doing well and are a very great benefit to the settlers. Pasture throughout the summer season, even in the dry season, never failed. Along all the old roads and burnt over areas both timothy and clover are to be found in great abundance. From the splendid results we have had on this farm and on the other experimental plots I am convinced that when the settlers can afford to cultivate their lands as is done in the older sections of the Province that equally good results will be obtained.

(Sgd.) J. F. Whitson.

Commissioner.

To the Honourable the Minister of Lands, Forests and Mines:

Sir,—I beg to recommend the expenditure of the following amounts during the season of 1917 under the *Northern and Northwestern Ontario Development Act*, 1912, on the construction of new roads, repairing and surfacing of old roads, the construction of bridges and culverts, the clearing of Crown Lands and the operation of Experimental Farms and garden plots at and near the Towns of Cochrane and Hearst; at the Ground Hog River, 50 miles west of Cochrane; at Kapuskasing, 70 miles west of Cochrane; at the Nagagami River, 40 miles west of Hearst, all on the Transcontinental Railway; and at the Town of Matheson, on the Temiskaming and Northern Ontario Railway.

District of Rainy River:

In the Rainy River Valley, to re-surface with gravel roads constructed last season, also the opening up of new roads in the partly settled townships in the northern part of the Rainy River Valley, and draining low-lying townships tributary to the Grassy River $35,000

District of Kenora:

To continue the grading of new roads in the agricultural section north and north-west of Dryden, and in the Valley of the Wabigoon River between the Grand Trunk Pacific Railway and the Canadian Pacific Railway, and in the partly settled townships east of Kenora 15,000

District of Port Arthur:

Re-surfacing trunk roads and the construction of new roads in the townships north, north-west and east of the City of Port Arthur, also bridge across Dog River, and the improvement of the Black Bay Road.. 30,000

District West and South of Fort William:

The re-surfacing and extension of the trunk roads under construction last season west of Fort William, the gravelling of parts of the Pigeon River or the Port Arthur, Fort William and Duluth Highway, including approach to International Bridge: the opening up of new roads in the Townships of Conmee, O'Connor, Lybster, Strange, Pearson, Paipoonge and Gillies, and two bridges on Slate River on trunk road 50,000

Sudbury and Sault Ste. Marie Trunk Road:

The construction of two bridges, one across the west branch of the Mississauga River and one across Laudouceaurs Creek: the completion of the gravelling of parts of the trunk road between Cuttler and Spanish River Stations, partly under construction last season, and the gravelling of part of trunk road along the Mississauga River 35,000

Sault St. Marie:

To complete the grading and improving of the People's Trunk Road from a point about 7 miles north of Sault Ste. Marie to a point on Batchawaung Bay, passing through Goulais Bay settlement, under construction last season 2,000

Manitoulin Island:

To continue the trunk road west from West Bay towards Gore Bay across the Manitoulin Island, and south to Mindemoya 10,000

District of Sudbury:

Surfacing with gravel and grading parts of the trunk road from the Village of Coniston to the Village of Warren on the Sudbury and North Bay Trunk Road: the completion of a mining road north of Onaping Station on the Canadian Pacific Railway, and the re-surfacing parts of trunk roads in the Blezard and the Chelmsford Valleys: cutting out an extension of the Shining Tree Mining Road from Shining Tree Lake to Wasabika, also cutting out of a winter road north of Shining Tree 50,000

Sudbury and North Bay Road:

Re-surfacing parts of the trunk road between North Bay and Sturgeon Falls, and the construction of bridge on the Colonization Road south of Sturgeon Falls Station 8,000

District of Nipissing:

To extend the Mattawa and Pembroke Trunk Road east from a point 5 miles east of Mattawa 5,000

The extension south of the North Bay, Callander and Powassan Trunk Road from South River to Burk's Falls, and the completion of the trunk road in the Township of Chisholm 18,000

District of Porcupine:

The construction of Mining Roads in the Porcupine Mining District and Colonization Roads and Bridges in the townships along the Porcupine Branch of the Temiskaming and Northern Ontario Railway, and the Township of Mountjoy 20,000

Temiskaming and Northern Ontario Railway:

Roads in townships east and west of the Temiskaming and Northern Ontario Railway from Cochrane south to Porquis Junction, including roads along the Iroquois Falls Branch of the Temiskaming and Northern Ontario Railway from Porquis Junction to the Abitibi River 40,000

Roads east and west from the Temiskaming and Northern Ontario Railway extending from Porquis Junction south to Boston Creek 40,000

Roads east and west of the Temiskaming and Northern Ontario Railway from Boston Creek south to the Village of Earlton, including the completion of a bridge over the White River east of Englehart; also extending west along the Charlton Branch of the Temiskaming and Northern Ontario Railway, and west, north-west and south-west of Charlton, including bridge across the Blanche River at Charlton 55,000

Transcontinental Railway:

The construction of roads and bridges along the Transcontinental Railway from Abitibi River, east of Cochrane, west to the Town of Hearst, including also the clearing of lands and the construction of roads and bridges east and west of the Military Detention Camp and Dominion Government Experimental Farm at Kapuskasing 60,000

To grade the North Bay and Trout Lake Road 2,000

For operating Experimental Farm plots near the Towns of Cochrane and Hearst: at the Ground Hog River, 50 miles west of Cochrane; the garden plot on the Nagagami River, 40 miles west of Hearst, all on the Transcontinental Railway; and the farm plots near the Towns of Matheson, Monteith and New Liskeard, on the Temiskaming and Northern Ontario Railway 15,000

For the construction of stables and storehouses near railway stations for the accommodation of incoming settlers	10,000
Unforeseen work and explorations, survey of new roads, renewing of old or damaged bridges and culverts, re-surfacing and improving of old roads and the construction of short roads in sections where new settlement is taking place or mines opening up	40,000
Office and engineering expenses, equipment and plant	20,000
	$560,000

I have the honour to be, Sir,

Your obedient servant,

J. F. WHITSON,

Commissioner.

Toronto, January 5th, 1917.

Appendix No. 37.

REPORT OF THE FORESTRY BRANCH.

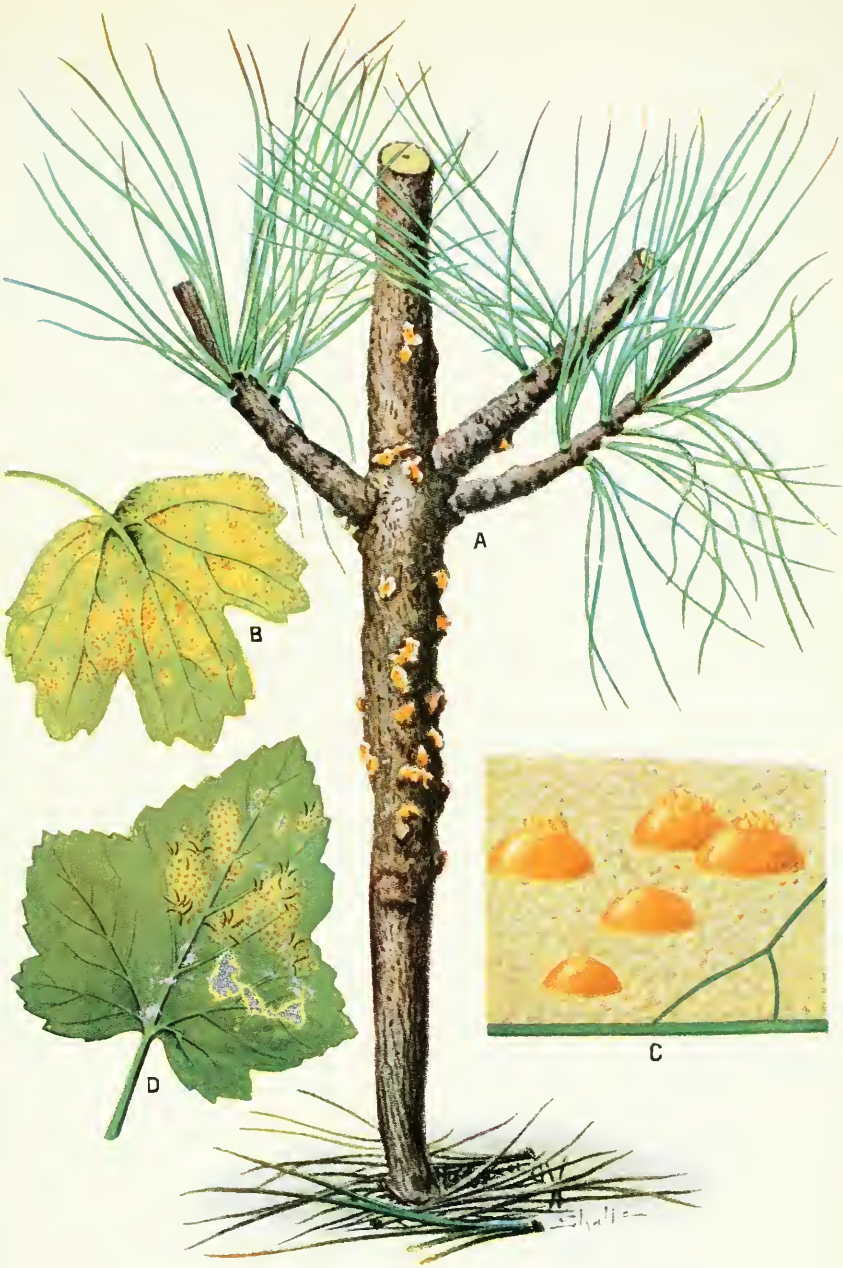
PARLIAMENT BUILDINGS, TORONTO.

SIR,—I have the honour to submit the following report of the Forestry Branch for the year ending October 31st, 1916.

PROVINCIAL FOREST STATION, NORFOLK COUNTY.

Forest Nurseries.—The following is a list of the plants in the Nurseries:—

White Pine in seed beds	196,000
White Pine transplants	140,500
Scotch Pine in seed beds	200,000
Scotch Pine transplants	63,000
Red Pine in seed beds	100,000
Red Pine transplants	5,000
Jack Pine in seed beds	100,000
Jack Pine transplants	17,000
Arbor Vitæ transplants	72,000
Miscellaneous Conifers	10,000
Black Locust	45,500
Black Walnut	12,500
Butternut	33,000
Sugar Maple	32,000
White Maple	16,800
Red Maple	2,600
White Ash	4,600
American Elm	5,400
Manitoba Maple	5,300
Chestnut	2,500
Red Oak	2,000
Miscellaneous Hardwoods	5,000
Total	1,070,700



THE WHITE-PINE BLISTER RUST

Figure "A" shows a young white pine with open blisters and swollen bark.
Figure "B" shows a leaf of flowering currant bearing the early currant stage.
Figure "C" is a part of the same leaf much magnified and showing four of the spore masses.
Figure "D" shows a black currant leaf bearing the late filamentous stage, this being the stage in which it is transmitted to the pine trees.

"A," "B" and "D" natural size.

COURTESY OF BUREAU OF PLANT INDUSTRY, U.S. DEPT. OF AGRICULTURE. BUL. 206.

This last season proved to be very unfavourable for the propagation of coniferous seedlings. The extreme wet weather just after seeding caused considerable loss. This was followed by extreme drought during July and August so that the seedlings have entered the winter in somewhat unfavourable conditions.

Forest Planting.—The demand for nursery stock for forest planting has fallen off considerably during the past two years. This is probably owing to the labour situation created by war conditions. Last spring we shipped to private owners for demonstration forest planting work, about 150,000 plants.

White Pine Blister Rust.

During the past season the Forestry Branch has had charge of the investigation of the "White Pine Blister Rust," which is a plant parasite introduced from Europe during the past decade.

Description of the Disease.—This disease attacks only the five-leaved pine group, to which our white pine belongs. Red or Norway and other two-leaved pines are immune.

The fungus causing the disease belongs to the rusts, of which the wheat rust is a well-known example. Like the wheat rust, the White Pine Blister Rust has two entirely different hosts. These are the white pine for one stage of growth and currants and gooseberries for the other stage.

The life history of the blister rust is as follows: The winter spores (seeds) produced during late summer and autumn upon the currant and gooseberry leaves (Figure D) are blown to white pines in the vicinity. They stick to the bark of young trees or branches, germinate, and the young threads penetrate the inner bark tissues. There is no visible sign of the attack for from one to several years, after which a thickening of the region occurs, finally resulting in a more or less spindle-shaped swelling. On this area, early in the spring, blisters appear filled with orange-yellow spores. The blisters break open, setting free the spores inside. This is the most conspicuous stage of the disease on the pine, but lasts only from about the middle of April to the middle of June. (Figure A.)

The spores (seeds) liberated from the pine blisters are blown about and fall upon the leaves of any currants or gooseberries that may be in the vicinity. Here they germinate at once and infect the leaves. In the course of a couple of weeks a new crop of spores (summer spores) is produced in tiny orange pustules on the lower surface of the currant or gooseberry leaves. (Figure B.)

These summer spores on being liberated in turn infect other currant and gooseberry leaves, and in another two weeks there is a new crop of summer spores on the new host. (Figure B.) The repetition of this cycle spreads the disease rapidly during the summer in an area which is constantly enlarging.

Towards the latter part of summer the current and gooseberry leaves produce on their lower surface slender horn-like outgrowths, which give rise to a different kind of spore. (Figure D.) These are known as winter spores and are capable of attacking pines but not currants or gooseberries.

From this account it is evident that the two hosts are necessary for this disease to spread. By successive infections of summer spores from diseased currants or gooseberries, this process repeated over and over again during the summer, the disease may spread long distances, and in the autumn infect white pines by means of the winter spores. These winter spores will attack only the pine. In the following spring the spores produced on pine re-infect the currants and goose-

berries, and the spreading march commences anew. The eradication of the disease accordingly can only be brought about by the destruction of the hosts in infected areas.

The stage of the rust upon the pine is the one in which the chief damage is done. The fungus lives year after year in the bark tissues of the pine until the stem or branch is girdled and the portion above dies. It is sure to kill the affected trees if the attack is on the stem.

During the past season we have had six Inspectors travelling throughout the older parts of Ontario locating where the disease may have obtained a foothold.

In addition to the work of these Inspectors, we have had very valuable assistance and co-operation from Mr. McCubbin who has charge of the Federal office of plant pathology at St. Catharines. We have also had the valued assistance of Prof. Howitt, Botanist of the Ontario Agricultural College. The following is a summary of the location and status of the disease as it now exists in Ontario:—

A.—Eastern Limit.

I. *Durham County.*
1. Clarke Tp.—One pine and a few adjacent currants diseased in 1915. No trace of disease found in 1916.
2. Darlington Tp.—Seventy-five pines diseased. Currant rusted area involved eight miles in a north and south direction; survey for east and west limits unfinished. All infected pine removed.

II. *Victoria County.*
1. Ops Tp.—Three pines diseased. Currant rust progressed a maximum distance of three miles (S. E.) from original centre, involving ninety bushes in ten town gardens. All infected pines removed.

B.—Northern Limit.

I. *Simcoe County.*
1. W. Gwillimbury Tp.—One hundred and ninety-four pines diseased. Currant rusted area now eleven miles square. All infected pines removed.

C.—Western Limit.

I. *Elgin County.*
1. Dunwich Tp.—Currant rust found in 1915. No currant rust found in 1916.
2. Bayham Tp.—Eight rusted currant bushes in two locations.

D.—Interior.

I. *Wellington County.*—One infected pine found early in spring and removed. No currant infection in 1916.

II. *Brant County.*
1. Brantford Tp.—Two pines and one currant bush diseased in 1915. No trace of disease in 1916.

III. *Halton County.*
1. Trafalgar Tp.—Eight trees and currant rust in 1915. Twenty-two trees in 1916; much currant rust in 1916 on seventeen properties.

E.—Niagara Peninsula.

I. *Wentworth County.*
1. Saltfleet Tp.—Rust in seven currant properties.

II. *Haldimand County.*
1. S. Cayuga Tp.—Two rusted currant bushes.

III. *Lincoln County.*

1. Clinton Tp.—	61	patches of	diseased	currants found.
2. Gainsboro Tp.—	10	"	"	"
3. Grantham Tp.	1	"	"	"
4. Grimsby Tp.	53	"	"	"
5. Louth Tp.	37	"	"	"

IV. *Welland County.*

1. Bertie Tp.—	17	"	"	"
2. Crowland Tp.—	3	"	"	"
3. Pelham Tp.—	45	"	"	"
4. Stamford Tp.—	18	"	"	"
5. Thorold Tp.—	31	"	"	"
6. Willoughby Tp.—	7	"	"	"

A large number of White Pine infections have been found in the Niagara Peninsula, especially in Pelham, Thorold and Grimsby townships. Many of these infections have been found on native pine. The disease has become firmly established in this region and presents a serious problem owing to the prevalence of both currants and White Pine.

Railway Fire Protection.

The Province of Ontario has during the past season employed twelve Inspectors to cover the railway lines coming under the jurisdiction of the Board of Railway Commissioners for Canada. These men investigate and report on fires; inspect fire protective appliances on locomotives; report on right-of-way conditions as related to fire hazards, and inspect fire patrols as required by the Board. The details of this inspection work was outlined in our report of 1915.

STATISTICAL REPORT OF FIRES ORIGINATING WITHIN 300 FEET OF RAILWAY LINES IN ONTARIO FOR THOSE LINES SUBJECT TO THE JURISDICTION OF THE BOARD OF RAILWAY COMMISSIONERS FOR CANADA. SEASON, 1916.

	C. N. R.	G. T. R.	C. P. R.	A. C.	Totals
(*a*) *Railway Fires:*					
1. Number, by causes:—					
(*a*) Locomotives, Class *A fires	4	8	2	.....	14
Class †B fires	56	13	29	1	99
(*b*) Employees, Class A fires.	.....	.....	.....	.....	.....
Class B fires.	3	.....	2	.....	5
(*c*) Total of Class A fires	4	8	2	.....	14
Total of Class B fires	59	13	31	1	104
Total of railway fires	63	21	33	1	118
2. Areas burned (acres):—					
(*a*) Young forest growth	361	26	124	.....	511
(*b*) Timber land	546½	.....	129	.....	675½
(*c*) Slashing or old burn	875¼	164¾	536	5	1,563
(*d*) Other classes of land	40⅝	50	44⅝	.....	135¼
(*e*) Total	1,805⅝	240¾	833⅝	5	2,885
3. Value of propertty destroyed:					
(*a*) Young forest growth	$475 50	$41 00	$169 50	.....	$686 00
(*b*) Standing timber	722 00	.....	552 50	.....	1,274 50
(*c*) Forest products	18 75	.....	.....	.....	18 75
(*d*) Other property	622 50	5 00	138 65	.....	766 15
(*e*) Total	$1,838 75	$46 00	$860 65	.....	$2,745 40
(*b*) *Known Causes other than Railway Systems.*					
1. Number due to:—					
(*a*) *Campers and Travellers.* Class A fires	.....	.....	.....	.....	.....
(*a*) *Campers and Travellers.* Class B fires	3	1	1	1	6
(*b*) Settlers, Class A fires	.....	.....	.....	.....	.....
Class B fires	.....	.....	.....	1	1
(*c*) Other known causes, Class A fires	.....	.....	1	.....	1
(*c*) Other known causes, Class B fires	2	.....	.....	.....	2
(*d*) Total of Class A fires	.....	.....	1	.....	1
Total of Class B fires	5	1	1	2	9
Total of other known causes	5	1	2	2	10
2. Areas burned:					
(*a*) Young forest growth	.....	.....	.....	.....	.....
(*b*) Timber land	3	.....	.....	.....	3
(*c*) Slashing or old burn	1,053½	.....	.....	25	1,078½
(*d*) Other classes of land	.....	¼	1	1½	2¾
(*e*) Total	1,056½	¼	1	26½	1,084¼
3. Value of property destroyel:					
(*a*) Young forest growth	$100 00	.....	.....	.....	$100 00
(*b*) Standing timber	65 00	.....	.....	.....	65 00
(*c*) Forest products	.....	.....	.....	.....	.....
(*d*) Other property	.....	.....	.....	.....	.....
(*e*) Total	$165 00	.....	.....	.....	$165 00

*Class A represents fires of less than one-quarter acre in extent.
†Class B represents fires of one-quarter acre and over.

STATISTICAL REPORT OF FIRES ORIGINATING WITHIN 300 FEET OF RAILWAY LINES IN ONTARIO, ETC.—Continued.

	C. N. R.	G. T. R.	C. P. R.	A. C.	Totals
(c) *Fires of Unknown Origin*:					
1. Number:—					
(a) Total of Class A fires	2	1	.....	.....	3
(b) Total of Class B fires	9	.....	6	.....	15
(c) Total of all unknown fires	11	1	6	.....	18
2. Areas burned:					
(a) Young forest growth	40	.....	5	.....	45
(b) Timber land	.....	.....	1	.....	1
(c) Slashing or old burn	56½	.....	15	.....	71½
(d) Other classes of land	11¼	⅛	5½	.....	16⅞
(e) Total	107¾	⅛	26½	.....	134⅜
3. Value of property destroyed:					
(a) Young forest growth	$20 00	.....	$5 00	.....	$25 00
(b) Standing timber	.....	.....	10 00	.....	10 00
(c) Forest products	90 00	.....	.....	.....	90 00
(d) Other property	404 00	.....	.....	.....	404 00
(e) Total	$514 00	.....	$15 00	.....	$529 00
(d) *Grand Totals for all Causes*:—					
1. Number:—					
(a) Total of all Class A fires..	6	9	3	.....	18
(b) Total of all Class B fires..	73	14	38	3	128
(c) Total of all fires reported.	79	23	41	3	146
2. Areas burned:					
(a) Young forest growth	401	26	129	.....	556
(b) Timber land	549½	.....	130	.....	679½
(c) Slashing or old burn	1,967¼	164¾	551	30	2,713
(d) Other classes of land	52⅛	50⅜	51⅛	1½	155⅛
(e) Total	2,969⅜	241⅛	861⅛	31½	4,103⅝
3. Value of property destroyed:					
(a) Young forest growth	$595 50	$41 00	$174 50	.....	$811 00
(b) Standing timber	787 00	.....	562 50	.....	1,349 50
(c) Forest products	108 75	.....	.....	.....	108 75
(d) Other property	1,026 50	5 00	138 65	.....	1,170 15
(e) Total	$2,517 75	$46 00	$875 65	.....	$3,439 40

TWENTY-SIXTH ANNUAL REPORT

OF THE

ONTARIO BUREAU OF MINES, 1917,

BEING

VOL. XXVI.

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PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1917

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

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(*In pocket on inside of back cover—inserts excepted*)

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LETTER OF TRANSMISSION

To His Honour Sir John Strathearn Hendrie, C.V.O.,

Lieutenant-Governor of the Province of Ontario.

Sir,—I have the honour to transmit herewith, for presentation to the Legislative Assembly of the Province of Ontario, the Twenty-sixth Annual Report of the Bureau of Mines.

I have the honour to be, Sir,

Your obedient servant,

G. H. Ferguson,

Minister of Lands, Forests and Mines.

Department of Lands, Forests and Mines,
Toronto, 1917.

2 M

SPECIMEN OF GOLD QUARTZ (ACTUAL SIZE) FROM CROESUS MINE, MUNRO TOWNSHIP, NORTHERN ONTARIO

Note drill hole in upper part of illustration. The ore is over one-third gold

INTRODUCTORY LETTER

To The Honourable George Howard Ferguson, K.C.,

Minister of Lands, Forests and Mines.

Sir,—I beg to submit to you herewith, for transmission to His Honour the Lieutenant-Governor in Council, the Twenty-sixth Annual Report of the Bureau of Mines, being for the calendar year 1916.

The Report opens with a statistical review of the mining industry of Ontario for the year, which was one of great activity, particularly in the mining of metals. The products of the mines and mineral works had a total value of upwards of sixty-five millions of dollars, showing an increase over the output of 1915 of more than eleven million dollars, or twenty per cent., and being the largest total yet recorded.

This is followed by a chapter on the Mining Accidents of the year by T. F. Sutherland, Chief Inspector of Mines, and by a description of the operating Mines of Ontario by Mr. Sutherland and the inspecting staff, showing the work done at the mines during 1916, and their condition at the close of the year, or latest date of inspection.

M. B. Baker gives an account of the Long Lake gold mine, Sudbury district, which is of interest because of the isolated position of this mine, not being in a recognized gold "camp"; and also records his observations on the Alexo Nickel Mine in the township of Dundonald, which occupies a similar relation to the well-known nickel area of Sudbury, from which it is 130 miles distant.

The Dryden Gold Area, by Ellis Thomson; the Kowkash Gold Area, by P. E. Hopkins; Gold-bearing Veins in Benoit Township, and Gold in Gauthier Township, by A. G. Burrows, give an idea of the conditions in these several localities, some or all of which contain the promise of gold production in the future.

A. G. Burrows examined the unsurveyed territory along the line of the Canadian Northern Ontario railway east of Lake Nipigon from Longuelac to Jellicoe and Orient Bay, and gives the results of his explorations in a chapter under that title.

Molybdenite is a mineral which has taken on a considerable degree of importance since the war began, because of its usefulness as an alloy of steel and in the making of special metal for high speed tools. In last year's Report a list of the Ontario occurrences was given by A. L. Parsons, and in the present volume that gentleman presents a description of these deposits in greater detail.

An interesting deposit of the rare mineral euxenite, in the township of South Sherbrooke, is the subject of a short chapter by W. G. Miller and C. W. Knight. Euxenite is of importance as containing a considerable proportion of uranium, and so constituting a source of radium. It is to be regretted that the indications regarding the quantity of this mineral do not point to the existence of a workable supply. Hitherto the chief sources of radium have been pitchblende and autunite

In Europe, and carnotite in the United States. It is estimated that euxenite concentrate carrying, say, 10.5 per cent. of U_3O_8 would be worth about $500 per ton.

The closing chapter of the Report, by W. G. Miller, deals with Lateric Ore Deposits. Lateric ore bodies are practically unknown in Ontario, where glacial erosion has been so severe, but in many other parts of the world this method of ore occurrence is of much importance. In view of the magnitude of the Ontario nickel industry, where the nature and relationships of the ore bodies are of an entirely different character, the lateric type of ore occurrence is of much interest, because of the fact that the New Caledonia deposits are of this nature, as well as the extensive beds of nickeliferous iron ore in Cuba.

Mention should be made of the staff of the Bureau of Mines, which has not been laggard in the defence of the cause of freedom and justice at stake in the present tremendous conflict. Sergeant A. G. Scovell, Clerk, enlisted in 1914 with the first Canadian contingent: Lieutenant J. G. McMillan in 1915, and Lieutenant James Bartlett in 1916, Assistant Inspectors of Mines, both joined the Tunnelling corps. Capt. Albert Skill, Mining Recorder at Elk Lake, and Private H. E. Sheppard, Mining Recorder at Gowganda, also enlisted, the former in 1915 and the latter in 1916. Private W. J. Bell, cartographer, enrolled himself as a cyclist in 1915. They have one and all worthily maintained the honour of Canada. Lieut. McMillan was promoted to be captain, and by his gallant conduct won the Military Cross. Private Bell was invalided home in 1916, and Capt. Skill was killed in action in October, 1917.

I have the honour to be, Sir,

Your obedient servant,

THOS. W. GIBSON,
Deputy Minister of Mines.

BUREAU OF MINES,
DEPARTMENT OF LANDS, FORESTS AND MINES,
Toronto, 1917.

STATISTICAL REVIEW

of the

MINERAL INDUSTRY OF ONTARIO FOR 1916

By THOS. W. GIBSON, Deputy Minister of Mines

The value of the mineral production of Ontario in 1916 was $65,303,822, an amount much in excess of that of any preceding year. The blow which the mining industry received from the outbreak of the great war in 1914 reduced the output of that year as compared with 1913 by 15 per cent., or nearly seven millions of dollars. More than the ground thus lost was regained in 1915, the production of which exceeded that of 1913 by over a million of dollars. The further advance made in 1916 was a notable one, the value of the output being greater than that of 1913 by upwards of twelve millions of dollars, or 22 per cent., and surpassing that of 1915 by over eleven millions of dollars, or 20 per cent.

The increase was almost wholly in metallic products, the production of the non-metallic substances remaining at about the same value as in 1915, namely, a little over ten millions of dollars. In part the enhanced value was due to higher prices, and in part to larger output. The metals of chief production in Ontario are nickel, copper, gold and silver. Following are figures which show the changes in output and value for 1916 of these metals as compared with 1915:

	Increase in production.	Increase in value.
Nickel, tons	7,260	$3,629,779
Copper, tons	2,822	4,377,451
Gold, ounces	86,242	1,837,868
Silver, ounces (decrease)	4,688,086	617,165

Advances in the prices of copper and silver were a marked feature of 1916, and the effect is very apparent in the statistics given above, especially in those pertaining to copper and silver. Further comment on prices and their effect upon production is reserved for later pages, under the heading of the respective metals.

Some fluctuations took place in the production of non-metallic substances in comparison with 1915. Brick, sewer pipe, drain tile and clay products generally declined, both in quantity and value; building materials other than brick, such as stone, lime, sand and gravel showed increases, but Portland cement fell off. Natural gas, which now competes with Portland cement for the leading place in the non-metallic list, and petroleum, were both lower in production than in 1915, but the petroleum product was worth more money. Graphite, quartz, mica and talc all increased. Gypsum declined. Fluorspar again appeared in the table of production. Iron pyrites, the mining of which is growing year by year, approached half a million dollars in value of output. Calcium carbide, whose production has largely increased by reason of the establishment at Welland of the Union Carbide

Company's plant, was dropped from the list of mineral products in 1915. The process of manufacture pertains more to the electro-chemical than to the mineral industry, and the limestone and coke, from which it is made, are of foreign origin, the former largely, and the latter wholly.

The aggregate value of the mineral production is reduced by excluding from the item of pig iron the quantity made from imported ore. Until 1915 the total output of the blast furnaces of the Province was given in the table, regardless of the origin of the ore. As the furnaces work for the most part on ore imported from the United States, it seemed advisable to confine the figures to the product of domestic ores.

The steady growth of the mineral industry of the Province is shown by comparing the value of the production say every fifth year since 1891, the date at which the Bureau of Mines was brought into existence. Following are the figures:—

Year.	Value Production. $	Growth per cent.
1891	4,705,673	
1896	5,235,003	11.2
1901	11,831,086	125.9
1906	22,388,383	89.2
1911	41,976,797	87.4
1916	65,303,822	55.5

Appended is Table I, which gives in summary form the leading statistics regarding the mineral production of 1916:—

TABLE I—MINERAL STATISTICS OF ONTARIO FOR 1916.

Product.		Quantity.	Value.	Employees.	Wages.
METALLIC.			$		$
Gold	ounces	497,833	10,339,259	2,600	3,067,225
Silver	"	20,007,367	12,703,591	2,650	2,538,420
Copper Ore	tons	1,052	33,102	90	25,948
Copper in matte (*a*)	"	22,430	8,332,153	4,821	4,920,720
Nickel in matte (*a*)	"	41,299	20,649,279		
Iron ore, exported	"	121,495	342,700	352	321,911
Pig Iron (*b*)	"	118,165	1,646,010	(*b*) 99	(*b*) 109,013
Cobalt (metallic)	lbs.	328,563	288,614	403	379,506
Cobalt oxide	"	691,681	473,713		
Nickel oxide	"	100,013	18,438		
Nickel (metallic)	"	42,411	17,847		
Other Nickel and Cobalt compounds	"	350,831	60,956		
Molybdenite (concentrates)	"	24,562	26,393	169	94,082
Lead	"	796,833	70,863	65	35,844
Metallic total			55,002,918	11,249	11,492,669

(*a*) Copper at 18½ and Nickel at 25 cents per pound in the matte.
(*b*) Production from Ontario Iron Ore only.

TABLE I—MINERAL STATISTICS OF ONTARIO FOR 1916.—*Continued.*

Product.		Quantity.	Value.	Employees.	Wages.
NON-METALLIC.			$		$
Arsenic, white, gray and other forms	lbs.	4,320,890	200,103	(c)	(c)
Asbestos	"	500	100	5	360
Brick, fancy, pressed and paving	M	31,742	318,942	341	209,253
Brick, common	"	60,441	509,559	1,329	470,044
Tile, drain	"	15,931	275,471		
" porous fireproofing	"	4,451	176,953	(d)	(d)
Cement, Portland	bbls.	2,143,949	2,242,433	659	428,774
Corundum	tons	67	8,763	39	10,046
Feldspar	"	12,965	42,159	119	33,063
Fluorspar	"	1,283	10,146	31	8,449
Graphite, refined	"	3,446	249,586	227	133,960
Gypsum, crushed, ground and calcined	"	36,668	116,206	99	61,718
Iron pyrites	"	175,593	471,807	117	111,368
Lime	bush.	1,453,254	265,356	242	140,202
Mica	tons	266	55,407	51	28,102
Natural gas	M. cu. ft.	17,953,396	2,404,499	653	404,039
Petroleum, crude	Imp. gals	6,890,681	387,846	(e) 105	(e) 83,012
Pottery			87,025	47	32,019
Quartz	tons	133,684	223,514	94	58,307
Salt	"	128,935	700,515	238	208,673
Sand and gravel	cu. yds.	1,265,973	470,963	344	212,123
Sewer pipe			216,749	169	111,644
Stone, building; trap, granite, etc.			755,313	736	396,812
Talc, crude and ground	tons	11,810	111,489	60	32,434
Total, non-metallic			10,300,904	5,705	3,174,402
Add metallic			55,002,918	11,249	11,492,669
Grand Total			65,303,822	16,954	14,667,071

(c) Included with Cobalt and Nickel compounds.
(d) Included with pressed, fancy and paving Brick.
(e) Employees and wages for proportion of domestic crude Petroleum distilled in Ontario refineries.

Table II presents the figures of production for the last five years. These enable the course of any particular branch of mining during that period to be followed. Notwithstanding the business depression and the beginning of the war which interrupted the progress of the industry in 1914, it will be seen that on the whole there has been a decided expansion, the annual value of the production having more than doubled during the time. Gold, nickel, copper and cobalt show the large increases consequent on the extensive developments which have been going on in the mining of these metals. Iron ore production is at best stationary. The decrease in pig iron, as compared with former years, is due to reporting only the product from domestic ore. The yield of silver, which attained its maximum in 1911, is falling, but the recent increase in price is sustaining the annual value. The growth of the figures representing the value of the cobalt and nickel by-products of the silver-cobalt ores reflects the steady development which has taken place in the treatment of these ores within the Province. The severe falling off in building materials, Portland cement, etc., is a natural result of the restriction, amounting almost to entire stoppage of construction work, since the outbreak of the war. The salt industry is now increasing its output, and the mining of quartz is also making considerable progress. Petroleum continues to decline slowly. Natural gas, for

the time being, appears to have reached its maximum, but new areas continue to be brought in. The rapid growth of iron pyrites mining is due in part to the war, and the scarcity of vessels for transporting copper pyrites and sulphur from Mediterranean ports. Difficulties in transportation have also had their effect in other branches of the industry.

TABLE II.—MINERAL PRODUCTION, 1912 TO 1916.

Product.	1912	1913	1914	1915	1916
METALLIC:	$	$	$	$	$
Gold	2,114,086	4,558,518	5,529,767	8,501,391	10,339,259
Silver	17,671,918	16,579,094	12,795,214	12,174,312	12,703,591
Cobalt	315,781	420,386	546,479	(a) 379,657	(a) 762,327
Copper	1,584,310	1,840,492	2,081,332	3,926,018	8,365,255
Nickel	4,736,460	5,250,803	5,136,804	(b)17,042,230	(b)20,685,564
Other Nickel and Cobalt compounds	.....	.....	45,189	9,227	60,956
Iron ore	93,558	138,750	169,427	171,345	342,700
Pig iron	8,054,369	8,719,892	7,041,079	1,891,400	1,646,610
Lead	1,290	.....	.....	.....	70,863
Molybdenite	.....	.....	.....	14,099	26,393
Platinum	80,736	.....	.....	.....	.....
Palladium	147,235	.....	.....	.....	.....
Metallic production	34,799,743	37,507,935	33,345,291	44,109,679	55,002,918
NON-METALLIC:					
Arsenic	79,297	64,146	116,624	148,379	200,103
Asbestos	.....	.....	.....	.....	100
Brick, common	3,178,250	3,452,352	2,336,207	763,591	509,559
" paving, fancy, etc.	221,986	243,119	237,440	158,515	318,942
" pressed	634,169	919,741	656,944	217,350	
Building and crushed stone	953,839	1,137,153	1,088,862	651,593	755,313
Calcium carbide	120,000	123,100	142,883	(c)	(c) .....
Cement, Portland	3,365,659	4,105,455	2,931,190	2,534,537	2,242,433
Corundum	233,212	137,036	65,730	31,398	8,763
Feldspar	28,916	67,142	55,686	47,031	42,159
Fluorspar	.....	.....	.....	.....	10,146
Graphite	65,076	93,054	87,167	115,274	249,586
Gypsum	50,246	92,627	221,175	(d) 190,422	116,206
Iron pyrites	71,043	171,687	264,722	353,498	471,807
Lime	381,672	390,600	333,407	244,953	265,356
Mica	57,384	55,264	40,402	33,490	55,407
Natural gas	2,268,022	2,362,021	2,346,687	2,622,838	2,404,499
Peat fuel	725	1,750	2,100	.....	.....
Petroleum (crude)	344,537	398,051	337,867	300,219	387,846
Phosphate of lime (apatite)	.....	.....	3,150	.....	.....
Pottery	52,445	52,875	25,720	49,387	87,025
Quartz	179,576	130,860	82,544	142,354	223,514
Salt	450,251	474,372	498,383	585,022	700,515
Sand and gravel	.....	233,567	151,909	178,288	470,963
Sewer pipe	464,627	600,297	571,756	361,283	216,749
Talc	61,358	125,340	(e) 74,583	(e) 85,325	111,489
Tile, drain	279,579	292,767	277,530	321,253	275,471
" porous fireproofing	.....	.....	.....	.....	(f) 176,953
Non-metallic production	13,541,869	15,724,376	12,950,668	10,136,000	10,300,904
Add metallic production	34,799,743	37,507,935	33,345,291	44,109,679	55,002,918
Total production	48,341,612	53,232,311	46,295,959	54,245,679	65,303,822

(a) Cobalt oxide and metallic Cobalt.
(b) Nickel in matte, oxide and metallic Nickel.
(c) Raw materials not all produced in Ontario.
(d) Crude Gypsum and Gypsum products.
(e) Crude and ground Talc.
(f) Included in former years with fancy, pressed and paving Brick.

Table III shows the total production of metals and metalliferous substances since mining began in Ontario. In the earlier stages of the industry and previous to the establishment of the Bureau of Mines, statistics of production were not officially or systematically collected, but the output was then insignificant as compared with the subsequent period, and the effect on the general result is correspondingly small.

TABLE III.—TOTAL PRODUCTION OF METALS IN ONTARIO.

Metal.	Value to end of 1915.	Value, 1916.	Total Value.
	$	$	$
Gold	23,324,389	10,339,259	33,663,648
Silver	138,724,909	12,703,591	151,428,500
Platinum and Palladium	290,755	.....	290,755
Cobalt (*a*)	2,418,663	762,327	3,180,990
Nickel (*b*)	68,442,600	20,685,564	89,128,164
Other Cobalt and Nickel Compounds	54,416	60,956	115,372
Copper	25,087,373	8,365,255	33,452,628
Iron Ore	7,851,181	342,700	8,193,881
Pig Iron	74,898,472	1,646,010	76,544,482
Lead	117,290	70,863	188,153
Zinc	92,410	.....	92,410
Molybdenum	15,774	26,393	42,167
Total	341,318,232	55,002,918	396,321,150

(*a*) Includes metallic contents of Cobalt Oxide.
(*b*) " " " Nickel Oxide.

Legislation.—The Workmen's Compensation Act, which has been in operation since January 1, 1915, originally provided that mine operators should pay to the Board 3 per cent. of the wages-roll to provide funds for compensating employees for injuries sustained. The rate for miners was reduced to 2½ per cent. for the year 1916. The Act is achieving a useful purpose in obtaining speedy adjustment of compensation for injuries, and of ridding the courts of actions for damages, in many instances promoted by unscrupulous practitioners interested in obtaining costs for their services.

By an amendment to the Mining Act the Legislature, in April, 1916, provided that "every person who performs labour for wages in connection with any mine, mining claim, mining lands, or works connected therewith, shall be paid such wages at intervals of not more than two weeks." The semi-monthly pay day is now practically universal in the mines of the Province.

Dividends.—During the year 1916 the sum of $4,431,750 was distributed as dividends to the shareholders of gold mining companies, and $5,519,257.64 to the shareholders of silver mining companies, or $9,951,007.64 in all. From the beginning of the modern period of remunerative metal mining in Ontario, the dividends paid by gold companies have amounted to $9,786,625 and by silver companies $65,290,170.34, a total of $75,076,795.34. The gold mines at Porcupine were opened in 1910, and the silver mines of Cobalt in 1904. If to this sum were added the dividends paid out by the nickel-copper companies, the aggregate would be

greatly increased. There are few or no countries in the world where mining of gold, silver and nickel can be carried on under more favourable conditions than in Ontario.

A statement in detail of the dividends paid by gold and silver mining companies will be found on a later page.

Effects of the War

The effects of the war upon the mining industry of the Province have been of a varied character. Demand for metals and other substances required for munitions, accompanied by higher prices, greatly stimulated production of nickel, copper, iron, steel, lead and molybdenite. Indirect stimulus was given to the mining of iron pyrites through the difficulty of obtaining supplies of sulphur from other sources, owing, mainly, to the diminution of shipping. On the other hand, the scarcity of labour already existing was intensified, and higher wages became necessary. The cost of supplies, practically of all kinds, underwent an enormous increase; hence working expenses could not be kept from mounting.

Nickel and copper are prime necessaries of modern warfare, and consequently have been and remain in unprecedented demand. The price of copper rose to heights previously unknown to the present generation, and the production of both metals was correspondingly stimulated. The price of nickel was raised, but not in proportion to that of copper. Extraction of ore and output of bessemer matte at Sudbury reached the highest recorded figures.

Pig iron of a value of nearly ten millions of dollars was produced, which was not far short of double the value of the output of 1915, and the quantity of steel made was 45 per cent. in excess of that of the latter year. The total quantity of iron ore, domestic and imported, charged into the blast furnaces of the Province was greater than in any previous year.

Ontario has not as yet produced much lead, but the conditions in 1916 were favourable for working such deposits as she possesses, Canadian prices being nearly 50 per cent. higher than in 1915. The output, chiefly from a recently developed deposit, equipped with a smelter, at Galetta near Ottawa, much surpassed that of any other year.

Molybdenite continued in demand owing to its usefulness in making high speed tool steel, and to the action of the British government in requisitioning the supplies throughout the Empire at a fixed price. There was a considerable increase in the quantity of ore raised and concentrates produced, and there are now three plants for concentrating the ore, and two furnaces producing ferro-molybdenum in the Province. A. L. Parsons, in this volume, gives a description of the numerous molybdenite occurrences which have been opened in Ontario.

Iron pyrites is abundant, and was raised in much increased quantities last year. It is roasted for recovery of the sulphur required for making the sulphuric acid needed at the present time, among many other uses, in the manufacture of explosives. The residue after roasting is iron ore, and can be made use of in making pig iron.

Advances in Ore Treatment

The tendency in the mineral industry of Ontario, particularly in the metals, is towards the production of the finished article, as contrasted with the mere mining and selling of the raw ore or material.

In gold, the universal practice is to treat the ore and recover the metal on the spot. This is in part due to the fact that the gold ores of the world are in the main of low grade, and will not bear unnecessary handling or freight charges, also to gold milling being feasible in small as well as large plants, and in practically any locality.

At the outset of silver mining in the Cobalt district, and for several years afterwards, the custom was to ship the ores as they were extracted, and mainly to smelters in the United States. High grade material carrying thousands of ounces per ton could be sent anywhere, and the silicious nature of the lower grades made them desirable for mixing with more basic ores in the smelters of the western States. The first step towards greater manipulation in the Cobalt camp was the introduction of concentrators for the low grade ores, thus obviating the necessity of paying freight charges on worthless material. Refining works were established at Deloro, Thorold, Orillia and Welland, where cheap electrical power was available, and important industries were developed not only in the refining of silver, but in the manufacture of white arsenic, and of cobalt and nickel oxides. More recently still, further developments have been made by the conversion of part of the oxides produced into the metals themselves and into a variety of their salts, such as the carbonate, hydroxide and sulphate of cobalt, and the sulphate of nickel, also by the manufacture of stellite, which has come into considerable demand as a metal for high speed tools, and which is an alloy of cobalt, chromium and tungsten.

Concurrently with the growth of these industries outside of Cobalt, important developments have taken place in the camp itself. Bullion is now regularly produced both from high grade and low grade ores, and some remarkably ingenious and successful processes have been devised to meet the special problems presented by the Cobalt ores. More recently, flotation processes have occupied the stage, and are already largely employed. These processes will enable vast heaps of tailings to be profitably treated, and millions of ounces of silver recovered which would otherwise have been lost.

Not much has yet been actually accomplished in the treatment of copper ores. All the purely copper ore, for instance, raised last year was shipped to outside smelting plants, chiefly in British Columbia, except the ore at the Bruce Mines, which the Mond Nickel Company extracted and used as a flux in its converters at Coniston. A smelter was built near Thessalon some years ago, but never did much work, and a proposition has been mooted to convert an idle iron blast furnace at Midland into a smelter for copper. However, the nickel-copper refinery of the International Nickel Company now going up at Port Colborne will soon be turning out copper, either in the refined form or in the next stage to it.

The nickel industry, too, has undergone a considerable evolution since its establishment. At first low grade matte only was made, containing say 20 per cent. of nickel and copper. Subsequently, bessemer converters were employed, and the metallic contents of the matte increased to about 80 per cent. Small plants,

with additions built from time to time as necessities required, gave way to works of great size, equipped with all modern devices and machinery. In the Sudbury smelters, as in the silver mills at Cobalt, skilled metallurgists and engineers have installed special processes to meet special requirements. The late D. H. Browne applied the use of powdered coal to the reverberatory furnace, and took a step in advance which has been followed in the great copper smelters of the West. The substitution of the acid for the basic converter, the use of the sintering furnace for fines, the partial elimination of the open roast heap for green ore, and other improvements, testify to the desire of the nickel-copper companies to keep fully abreast or even in advance of the times. Mention has already been made of the refinery being built by the International Nickel Company, which is to have a capacity of 7,500 tons of refined nickel per annum that will probably be increased in the near future. And when the plans of the British America Nickel Corporation are fully carried into effect, there will be two nickel refineries in operation of capacity equal to the demand for the metal from the entire British Empire.

A company has also been formed for the manufacture of nickel-copper steel direct from the Sudbury ore, recent investigations and experiments having shown that the prejudice against the presence of a moderate proportion of copper in steel is not justified by the facts. The next logical step in the development of the nickel industry will be the establishment of plants for the making of nickel steel, either from imported or domestic iron ore if the latter can be had in sufficient quantity.

The beneficiation of low grade magnetic iron ore has been attempted by a variety of processes, and in three places at least with a considerable degree of success. At Trenton a concentration plant on the magnetic principle has treated a considerable quantity of ore from the Bessemer and Childs mines in Hastings county, and at Moose Mountain the leaner ores of that mine have been concentrated, also magnetically, and marketed in briquette form. The sideritic ores of the Magpie mine, and also some of the high sulphur material from the Helen mine, have been roasted and rendered amenable for use in the blast furnace. The Magpie ore after treatment carries about 2 per cent. of manganese and 53 per cent. of metallic iron, and is in good demand from United States furnaces. Ontario blast furnaces in 1916 made nearly 700,000 tons of pig iron, but, as formerly, much the smaller proportion of the iron ore charged into them came from the mines of the Province, the remainder being from the United States.

Molybdenite and lead have not figured very largely in Ontario so far. The making of war munitions, however, has for the time being stimulated the demand for both metals, and reference has already been made to the increased workings for them. Concentration plants for molybdenite have been followed by the installation of plants at Orillia and Belleville for the manufacture of ferro-molybdenum, the form in which it is used by steel makers. Formerly, the English supply of ferro-molybdenum came entirely from Germany. Another ferro compound, ferro-silicon, is being made on an extensive scale by Electro Metals, Limited, at Welland.

A smelter for the production of pig lead has been installed at Galetta on the Ottawa river, to treat the ore raised from the lead mine at that place. About 400 tons of lead were made last year.

Progress in Non-Metallic Industries

In the non-metallic branches of the industry, development towards the higher stages is not discernible to the same extent, and is perhaps not to be expected, since many of the products go into use practically in the form in which they are extracted. Some advances, however, are being made.

In the realm of clay goods, porous hollow tile, used chiefly for flooring and wall construction in steel-frame buildings, is increasing in importance, and Ontario clay workers are now making a high-class product.

Cement tile, brick and building blocks are also being more largely made than formerly. Salt, which until a short time ago, was used only as such, is now being subjected to electrolysis in the natural brine by the Canadian Salt Company for the production of caustic soda and bleaching powder.

Feldspar, for the most part, exported to be ground and used in the pottery and enamelled-ware trades of New Jersey and Ohio, has been employed in the manufacture of wall and floor tiles at Kingston. Attempts have been made to put the potash constituent of feldspar in soluble form and so make it available for fertilizing purposes, but so far the process has not been worked in a commercial way.

Iron pyrites has long been used in the manufacture of sulphuric acid at Sulphide, where the Nichols Chemical Company has a mine and plant.

The grinding and preparation of talc for a variety of uses is in successful operation at Madoc, also the milling and refining of graphite at the Black Donald mine near Calabogie, and by the Globe Graphite Company, Port Elmsley.

Quartz and quartzite are raised for use in the making of ferro-silicon, and in the conversion of low grade to Bessemer nickel-copper matte.

Importance of Hydraulic Power

In the absence of coal mines in this Province, and the scarcity and high cost of coal imported from the United States, it is highly important to the mineral industry that it can for the greater part employ electric power in its mines and plants. Hitherto, the requirements of the several mining districts of the north and northwest portions of the Province have been met by power developed from falls situated on near-by rivers. As the mines became more numerous and their power requirements greater, there have been times when the supply of power was not equal to the demand. Such a situation held back the development of the Kirkland Lake gold district, where relief has now been granted by the extension of the transmission lines from Cobalt. Even in Porcupine there is no plethora of developed power, and in the Sudbury area practically all of the important falls have been developed and are being made use of. For the uses of the British America Nickel Corporation, it is proposed to develop the Chaudiere falls on the French river near its exit from Lake Nipissing. The Canadian Copper Company has at present under way a scheme for procuring a greatly increased supply of power from the Spanish river, which will involve a considerable stretch of the river above High falls, the present source of supply, and the expenditure of a large sum of money. For refineries and the operation of chemical or manufacturing industries of a mineral type, the advantages of the neighbourhood of Niagara Falls are undoubtedly

great, as is proven by the very extensive growth of industries of this kind on both sides of the river. For plants of other kinds also, such as pulp and paper mills, abundance of hydraulic power is required in northern Ontario, and the control and regulation of the rivers of this region is a matter of much moment in the economic development of the Province. The mining industry is well served by the rivers of the north.

The water powers held under lease from the Crown produced a revenue of $27,225 for the fiscal year ending 31st October, 1916.

For details as to the various producing properties, metallic and non-metallic, and the field developments in progress, reference should be had to the reports of the Chief Inspector and assistant Inspectors of Mines, printed under the title "Mines of Ontario."

Gold

The world's gold production for 1916 is estimated as £95,125,000. This is a decrease of about £2,000,000 as compared with 1915, which was the highest on record. Two-thirds of the entire yield is produced in the British Empire. Africa yields 47 per cent. of the whole production, of which 41.25 per cent. comes from the great mines of the Rand.

The gold mines of the Province in 1916 yielded 491,833 fine ounces of gold, as against 411,588 ounces in 1915, an increase of 20 per cent. Most of the gold came from the mines of the Porcupine area, but there were contributors also from Kirkland lake, Munro township and Long lake. The schedule which follows gives the production of the several mines. A few ounces of gold were obtained from the non-nickeliferous copper ores shipped from the northwestern part of the Province to British Columbia, and from other casual sources.

Of the mines on the list the first seven are in the Porcupine camp. These produced a total of 452,995 ounces or 90 per cent. of the whole. The Tough-Oakes is at Kirkland Lake, where several other promising properties are preparing to enter the producing class. Croesus is in the township of Munro which, like Kirkland Lake, lies some distance east of Porcupine, between the line of the Timiskaming and Northern Ontario railway and the boundary of Quebec. The plant here was destroyed by fire in August, 1916, with disastrous loss of human life. Mining was not resumed until about the end of the year. The Long Lake mine, owned by the Canadian Exploration Company, Limited, is situated near Naughton station on the Sault branch of the Canadian Pacific railway. It is peculiar among the gold mines of the Province in being apparently isolated from other known auriferous deposits. The Long Lake mine closed down on the last day of July, and only diamond drilling has been carried on since. The area in this neighbourhood was examined during the year on behalf of the Bureau of Mines by Prof. M. B. Baker, of Queen's University, Kingston, whose report will be found in another part of this volume.

The production of the various gold mines, the tonnage of ore treated and other particulars, are shown in the following table:—

TABLE IV.—GOLD MINING IN 1916.

Mine.	Tons Ore milled.	Gold Product.		Silver Product.		Total Value.	Extraction per ton	Dividends in year.
		Fine ounces.	Value.	Fine ounces.	Value.			
			$ c.		$ c.	$ c.	$ c.	$
1. Hollinger	601,854	244,139.8	5,046,651 75	41,236.8	26,749 30	5,073,401 05	8 42	3,126,000
2. Dome	444,900	103,808.8	2,142,938 81	17,089.4	10,880 98	2,153,819 79	4 84	800,000
3. McIntyre(*a*)	136,489	55,755.5	1,209,275 97	12,600.1	8,797 13	1,218,073 10	8 85	.....
4. Porc. Crown	51,273	27,876.6	575,725 05	3,926.8	2,596 84	578,321 89	11 27	240,000
5. Schumacher	46,463	10,844.3	224,157 26	1,700.8	1,143 96	225,301 22	1 84	.....
6. Porc. Vipond	43,041	8,508.7	175,871 44	1,255.0	812 08	176,686 52	1 10	.....
7. Dome Lake	6,542	871.4	16,785 43	45.0	29 34	16,814 77	2 57	.....
8. Tough-Oakes	39,865	33,991.3	702,760 70	13,051.0	8,864 76	711,625 46	17 85	265,750
9. Long Lake	26,846	9,229.8	187,002 62	152.5	99 61	187,102 23	6 96	.....
10. Cresus(*b*)	477	2,495.1	51,578 34	216.1	144 18	51,722 52	.....	.....
11. Miscel'aneous(*c*)	.....	341.5	6,509 08	.....	.....	6,509 08	.....	.....
Total	1,397,750	497,863.8	10,339,259 45	91,873.5	60,118 18	10,399,377 63	7,358(*d*)	4,431,750

(*a*) Includes McIntyre-Jupiter and McIntyre-Extension.
(*b*) Tons raised.
(*c*) Small producers, slag, copper, ores, etc.
(*d*) Average of mines, 1 to 9 inclusive.

The gold production of the Province and of the Porcupine area respectively, for the last seven years, are shown by the figures appended. It will be seen that the Porcupine mines have supplied very much the larger share.

Year.	Total Production. $	Porcupine. $	Percentage from Porcupine.
1910	68,498	35,539	51.8
1911	42,637	15,437	36.2
1912	2,114,086	1,730,628	81.8
1913	4,558,518	4,294,113	94.1
1914	5,529,767	5,190,794	93.8
1915	8,501,391	7,536,275	88.6
1916	10,339,259	9,397,536	90.8

The development of the Porcupine gold camp has been very satisfactory, and the characteristics of the deposits there are such as to warrant the expectation that the mines will have a reasonably long life. But it is not risking much to say that other gold areas in northern Ontario which are now in the development stage will ere long be contributing their quota of bullion. Already one field, that at Kirkland lake, where the Tough-Oakes mine is situated, is making a substantial production, and several new properties there now in various stages of development, are likely to add to the total. Additional areas, such as Boston Creek, West Shining Tree, Kowkash and Dryden, are passing through the earlier stages in the evolution of a new gold camp. The old St. Anthony mine at Sturgeon lake has become the property of New York investors, who are opening it up and who appear to be satisfied that it will prove a profitable, though perhaps not a large, mine. There are prospects in the Seine river, Lake of the Woods, Larder lake and eastern Ontario areas, which are by no means destitute of merit, and it may yet prove that some of these old fields, though for the present idle, will come again into action.

The latest gold finds are in the township of Powell and Cairo, in the Montreal river Mining Division. At Bourke's siding in the township of Maisonville, also, good samples of gold ore have been found, but so far there has been little work done.

It is one of the aims of the Bureau of Mines to obtain and publish, in the early stages of their development, reliable data regarding the geology and mineralogy of newly located mineral areas. In pursuance of this policy, Ellis Thomson was commissioned last year to make a preliminary examination of the Dryden gold area, and P. E. Hopkins continued his work in the Kowkash-Tashota field on the National Transcontinental railway northeast of Lake Nipigon. A. G. Burrows also made a general reconnaissance along the line of the Canadian Northern railway eastward of Lake Nipigon. The reports of these gentlemen are printed in this volume, and are accompanied by geological maps of the respective areas.

Experience shows that very practical assistance can be given the prospector by furnishing him with a map of a newly found mineral belt, and providing him with a key to the geological significance of its rock formations. A map of this kind with marginal annotations is more convenient of reference, more easily carried in the field than a printed volume, and serves almost every purpose of the latter.

Following is a list of the productive gold mines last year:—

PRODUCING GOLD MINES, 1916.

Name of Company.	Name of Mine.	Locality.	P.O. Address of Manager, etc.
Canadian Exploration Company, Limited	Long Lake	Long Lake	Naughton.
Croesus Gold Mines, Limited	Croesus	Munro township.	Matheson.
Dome Mines, Limited	Dome	Porcupine	South Porcupine.
Dome Lake Mining and Milling Company, Limited	Dome Lake	Porcupine	South Porcupine.
Hollinger Consolidated Gold Mines, Limited	Hollinger	Porcupine	Timmins.
McIntyre-Porcupine Mines, Limited.	McIntyre	Porcupine	Schumacher.
Porcupine Crown Mines, Limited	Porcupine Crown	Porcupine	Timmins.
Porcupine Vipond Mines, Limited	Vipond	Porcupine	Timmins.
Schumacher Gold Mines, Limited	Schumacher	Porcupine	Schumacher.
Tough-Oakes Gold Mines, Limited.	Tough-Oakes	Kirkland Lake..	Kirkland Lake.

Silver

The silver mines of the Province produced and shipped 20,007,367 fine ounces of silver, compared with 24,823,660 ounces in 1915. There was thus a considerable falling off in quantity, amounting to 24 per cent. On the other hand, the money value of the output was greater than in 1915, being $12,703,591 as against $12,174,312, an increase of 4.3 per cent. The better prices prevailing for silver last year influenced the companies to maintain a high standard of production, notwithstanding the difficulties created by the labour shortage and the increased cost of supplies. The average price for fine silver in New York was 65.661 cents per ounce, as compared with 49.69 cents in 1915. The lowest figure was 55.875 cents, and the highest 77.25 cents. The large demand for silver is in part due to the requirements of the belligerent countries, where silver is being coined to replace gold withdrawn from circulation.

According to camps, the output was as follows:—

	Ounces.
Casey township	445,900
South Lorrain	77,280
Gowganda	383,393
Cobalt proper	19,008,517
Silver recovered from gold, copper and lead ores	92,277
Total	20,007,367

The mines sending out more than one million ounces of silver were:—

	Ounces.
Nipissing	3,819,768
Townsite-City	3,115,637
Kerr Lake	2,527,062
Coniagas	1,816,287
McKinley-Darragh-Savage	1,055,959

Those shipping less than a million ounces, but more than half a million were:

Cobalt Lake	994,608
Temiskaming	873,507
La Rose Consolidated	830,707
O'Brien	770,068
Seneca-Superior	675,302
Beaver Consolidated	567,993
Penn-Canadian	518,585

Table VI gives the total production of silver from the Cobalt mines since they were opened in 1904, classifying the shipments as ore, concentrates and bullion. It must be understood that the table deals with shipments as they leave Cobalt camp for outside points, whether in Ontario or the United States, and not with inter-camp movements of ore, as for instance from a mine to a concentration or refining plant in Cobalt itself. A very large part of the shipments from Cobalt goes to the refining plants in older Ontario, where the silver is recovered as merchantable bars, and the other constituents of the ore obtained as metallic cobalt and nickel, refined oxides and alloys or other products of cobalt and nickel. The arsenic is produced as white arsenic, and now also in the metallic form.

The table is as follows:—

TABLE V—SILVER PRODUCTION, COBALT MINES, 1904 TO 1916.

Year.	No. of Producing Mines.	Shipments and Silver Contents							Total.	
		Ore.		Av. per ton.	Concentrates.		Av. per ton.	Bullion.	Ounces.	Value.
		Tons.	Oz.	Oz.	Tons.	Oz.	Oz.	Oz.		$
1904....	4	158	206,875	1,309	.....	.....	.....	.....	206,875	111,887
1905....	16	2,144	2,451,356	1,143	.....	.....	.....	.....	2,451,356	1,360,503
1906....	17	5,335	5,401,766	1,013	.....	.....	.....	.....	5,401,766	3,667,551
1907....	28	14,788	10,023,311	677	.....	.....	.....	.....	10,023,311	6,155 391
1908....	30	24 487	18,022,480	736	1,137	1,415,395	1,244	.....	19,437,875	9,133,378
1909....	31	27,729	22,436,355	809	2,948	3,461,470	1,174	.....	25,897 825	12,461,576
1910....	41	27,437	22,581,714	821	6,845	7,082,834	1,030	980,633	30,645,181	15,478,047
1911....	34	17,278	20,318,626	1,176	9,375	8,056,189	858	3,132,976	31,507,791	15,953,847
1912....	30	10 719	15,395,504	1,436	11,214	9,768,228	871	5,080,127	30,243,859	17,408,935
1913....	35	9,861	13,668,079	1,386	11,016	8,489,321	770	7 524,575	29,681,975	16,553,981
1914....	32	4,302	6,504,753	1,511	12,152	8,915,958	733	9,742,130	25,162,841	12,765,461
1915....	24	2,865	6,758,286	2,359	11,996	10,001,548	834	7 986,700	24,746,534	12,135,816
1916....	28	2,177	4 672,500	2,146	8,561	7,598,011	887	7,644,579	19,915,090	12,643,175
Total ..	.....	149,280	148,441,605	994	75,244	64,788,954	861	42,091,720	255,322,279	135,829,548

The average annual production of silver from the mines of Cobalt until the end of 1916 was 19,640,292 ounces, very nearly the output for last year. A glance at the table will show that the production grew very rapidly in the earlier years of the camp, reaching the maximum in 1911. Since then there has been a decrease year by year, but the falling-off has been at a slower rate than was the rise. So far, the curve depicting the decline in the yield of Cobalt has been much flatter than that representing the increase.

Shipments of ore and concentrates from Cobalt to refineries in the United States comprised 364 tons of ore carrying 408,014 ounces, and 3,760.35 tons of concentrates carrying 1,629,841 ounces—a total of 2,037,855 ounces of silver.

The Flotation Process

Doubtless the process of flotation for the concentration of low grade ores is one of the most important developments of modern metallurgy. It has been found adapted to the treatment of the heaps of tailings which have accumulated round the mines of Cobalt, as well as to the leaner wall and mine rock, and its effect in prolonging the life of the silver mining industry there will undoubtedly be considerable. Material incapable of being treated by ordinary gravity methods is susceptible to the flotation process, and what was formerly waste is now a source of profit. There is a description of the flotation process as applied to the Cobalt ores in that part of this Report dealing with the Mines of Ontario.

The bitterly contested ligitation regarding the respective rights of rival patentees and claimants has for some time deprived the mining industry of the full use of this remarkable invention, and the probability is now that these rights are largely settled, the successful contestants will try to recoup themselves for their expenses by charging roundly for the privilege of using the process.

The introduction of flotation has led to a demand for oil of a quality required in the process. Experience has shown that to produce the necessary froth, a proportion of pine oil is desirable, if not indispensable. This has so far come from the southern States, but the demand has brought about an increase of price, and also, it is said, a deterioration of quality. Successful efforts have been made to obtain this oil from Canadian woods, stumps of the red pine, which abound in the forests of the north where lumbering operations have been carried on, having been found to yield oil well suited for the purpose. More recently it has been shown that an oil obtained from the distillation of hardwood in charcoal plants, heretofore of little value, is well suited for flotation processes.

Extraction by flotation is subject to peculiar fluctuations in its results, from causes which are not as yet thoroughly understood. As experience with the process accumulates, its operation will tend to become standardized. At the McKinley-Darragh-Savage mine, slimes finer than 200-mesh were treated by flotation, the average contents of the "heads" for seven months being 6.78 ounces per ton. A saving of 71.37 per cent. of the silver was made, the "tails" carrying an average of 1.909 ounces per ton. The average contents of the concentrates produced was 262 ounces of silver per ton. The chief economic minerals recovered were argentite, proustite, pyrargyrite and metallic silver.*

*Report by Arthur A. Cole on the Mining Industry in that part of Northern Ontario served by the T. & N. O. railway, 1916, p. 22.

Refining of ore and concentrates produced at Cobalt was carried on throughout the year by the following companies, namely, Coniagas Reduction Company, Limited, at Thorold, Deloro Smelting and Refining Company, at Deloro, and Metals Chemical, Limited, at Welland. The plants of the first two companies are operated largely on high grade ore and concentrates, and while recovery of silver is the primary purpose, they also obtain the arsenic, cobalt and nickel constituents which the raw materials contain. These are produced in commercial form as white arsenic and cobalt and nickel oxides. Both now refine the oxides to obtain metallic cobalt: at Deloro metallic nickel and also the alloy stellite are produced: and at Thorold metallic arsenic. At the works of Metals Chemical, Limited, are treated only low grade ores and residues from the silver mills at Cobalt, consequently the silver output of this company is negligible. Crude arsenic only is obtained, but a considerable range of cobalt and nickel compounds is produced. These comprise the refined oxides of both metals, carbonate and sulphate of cobalt, and sulphate of nickel. In the manufacturing process, the oxides are first obtained, which serve as the raw materials for the subsequent forms. Nickel sulphate is coming extensively into use in the hydrogenization of liquid oils or fats, especially in the manufacture of soap.

The figures given below show that over a million dollars' worth of products were obtained at the refineries from the material treated, or an average of $136 per ton, altogether exclusive of the silver product, which had a value of $722 per ton.

The table is significant of the development which has taken place in the home metallurgy of the silver-cobalt ores since the mines of Cobalt were opened. Adding the bullion produced at these refineries to that obtained at the mills in Cobalt itself, it will be seen that out of a total of 19,915,090 ounces of silver contained in the ores raised at Cobalt in 1916, no less than 17,310,095 ounces were refined in Ontario, or 87 per cent. of the entire production.

Following is the table:—

OPERATION OF ONTARIO SILVER-COBALT REFINERIES, 1916.

Product.	Quantity.	Value.
Ore, Concentrates and Residues treated ..... tons	7,771	.....
Silver recovered ..... fine ounces	9,665,516	5,618,237
Arsenic, White, shipments ..... lbs.	4,058,822	186,509
Arsenic, Crude, shipments ..... "	179,955	5,387
Arsenic, Metallic, shipments ..... "	82,703	8,207
Cobalt Oxides, shipments ..... "	691,681	473,713
Cobalt Carbonate and Sulphate, shipments ..... "	60,943	19,115
Cobalt, Metallic, shipments ..... "	328,563	288,614
Nickel Oxide, shipments ..... "	100,013	18,438
Nickel Sulphate, shipments ..... "	232,450	18,868
Nickel, Metallic, shipments ..... "	42,411	17,847
Cobalt and Nickel Oxides, not separated, shipments ..... "	57,437	22,973
Total value of products		$6,677,908

The average number of workmen employed throughout the year was 403, and there was paid to them as wages the sum of $379,506.

TABLE VI.—DIVIDENDS AND BONUSES BY GOLD AND SILVER MINING COMPANIES TO DECEMBER 31ST, 1916.

Name of Company.	Date of Incorporation.	Authorized Capital.	Capital Stock Issued.	Par value per share.	Amount of Dividends and Bonuses declared to end of 1915	Amount of Dividends and Bonuses declared during 1916.		Total of Dividends and Bonuses declared to Dec. 31st, 1916.	Last Dividend or Bonus. Date declared.
GOLD COMPANIES.		$	$	$ c.	$	$ c.	%	$	
Dome Mines Company, Ltd.	Mar. 23, 1910	5,000,000	4,000,000	10 00	400,000 00	800,000 00	20	1,200,000 00	Dec. 1, 1916
Hollinger Consolidated Gold Mines, Ltd.	May 20, 1916	25,000,000	24,600,000	5 00	4,170,000 00 **160,000 00	3,126,000 00	13	7,456,000 00	Dec. 31, 1916
Porcupine Crown Mines, Ltd.	May 26, 1913	2,000,000	2,000,000	1 00	480,000 00	240,000 00	12	720,000 00	Oct. 1, 1916
Rea Consolidated Gold Mines	April 5, 1911	1,000,000	200,000	5 00	12,000 00	.....	....	12,000 00	.....
Tough-Oakes Gold Mines, Ltd.	July 15, 1913	3,000,000	2,657,500	5 00	132,875 00	265,750 00	10	398,625 00	Dec. 27, 1916
Total from Gold Companies	.....	.....	.....	.....	5,354,875 00	4,431,750 00		9,786,625 00	
SILVER COMPANIES.									
Beaver Consolidated Mines, Ltd.	Mar. 1, 1907	2,000,000	2,000,000	1 00	590,000 00	60,000 00	3	650,000 00	April 8, 1916
Buffalo Mines, Ltd., The	April 27, 1906	1,000,000	1,000,000	1 00	2,787,000 00	.....	....	2,787,000 00	May 28, 1914
Casey Cobalt Silver Mining Company, Ltd.	Dec. 19, 1906	100,000	100,000	1 00	203,249 33	.....	....	203,249 33	April 22, 1914
Cobalt Comet Mines, Ltd.	April 16, 1913	1,000,000	1,000,000	1 00	230,000 00	.....	....	230,000 00	April 1, 1915
Coniagas Mines, Limited, The	Nov. 24, 1906	4,000,000	4,000,000	5 00	7,840,000 00	600,000 00	15	8,440,000 00	Nov. 1, 1916
Crown Reserve Mining Co., Ltd.	Jan. 16, 1907	2,000,000	1,999,957	1 00	6,102,408 30	88,440 70	5	6,190,849 00	Dec. 28, 1916
Kerr Lake Mining Company, Ltd.	Aug. 9, 1905	40,000	40,000	100 00	6,508,000 00	629,000 00	....	7,128,000 00	Oct. 10, 1916
La Rose Mines, Ltd.	May 31, 1908	6,000,000	6,000,000	5 00	5,702,546 84	328,000 00	4	6,030,546 84	Dec. 15, 1916
McKinley-Darragh-Savage Mines of Cobalt Ltd.	April 17, 1906	2,500,000	2,247,692	1 00	4,674,207 42	269,723 04	12	4,943,930 46	Nov. 22, 1916
†Mining Corporation of Canada, Ltd.	Mar. 20, 1914	2,075,000	2,075,000	1 00	778,125 00	583,593 75	....	1,361,718 75	Sept. 30, 1916
Nipissing Mining Company, Ltd.	Dec. 16, 1904	250,000	250,000	100 00	14,453,297 25	1,835,000 00	....	16,288,297 25	Dec. 18, 1916
Penn-Canadian Mines, Ltd.	April 24, 1912	1,500,000	1,349,705	1 00	.....	67,485 25	5	67,485 25	Nov. 10, 1916
Seneca-Superior Silver Mines, Ltd.	Sept. 29, 1911	500,000	478,884	1 00	981,212 20	598,605 00	....	1,579,817 20	Dec. 15, 1916
Temiskaming Mining Co., Ltd.	Nov. 5, 1906	2,500,000	2,500,000	1 00	1,459,156 25	225,000 00	9	1,684,156 25	Nov. 22, 1916
Wettlaufer Lorrain Silver Mines, Ltd.	Nov. 30, 1908	1,500,000	1,416,590	1 00	637,465 50	.....	....	637,465 50	Sept. 22, 1913
Trethewey Silver Cobalt Mines, Ltd.	May 30, 1906 June 1, 1911	2,000,000	1,000,000	1 00	1,061,998 50	50,000 00	5	1,111,998 50	Dec. 1, 1916
Right of Way Mines, Ltd.	Sept. 11, 1909	2,000,000	1,685,500	1 00	219,115 20	25,282 50	1½	244,397 70	Sept. 15, 1916

Right of Way Mining Co., Ltd.	July	13, 1906	500,000	500,000	1 00	324,643 93	.....	....	324,643 93	.....		
Peterson Lake Silver-Cobalt Mining Co., Ltd.	April	11, 1906	3,000,000	2,401,820	1 00	294,222 95	168,127 40	....	462,350 35	.....		
‡City of Cobalt Mining Co., Ltd.	Oct.	5, 1906	500,000	1,500,000	1 00	145,000 00	.....	....	145,000 00	April	15,	1909
	Jan.	7, 1909	1,500,000									
Cobalt Central Mines Co., Ltd.	Dec.	13, 1906	5,000,000	5,000,000	1 00	192,845 00	.....	....	192,845 00	Aug.	25,	1909
‡Cobalt Lake Mining Co., Ltd.	Dec.	22, 1906	3,000,000	3,000,000	1 00	465,000 00	.....	....	465,000 00	May	29,	1914
Cobalt Silver Queen, Ltd.	April	1, 1906	1,500,000	1,500,000	1 00	315,000 00	.....	....	315,000 00	Dec.	31,	1908
‡Cobalt Townsite Mining Co., Ltd.	May	8, 1906	100,000	45,011	1 00	1,042,259 61	.....	....	1,042,259 61	Nov.	11,	1914
Foster Cobalt Mining Co., Ltd.	Feb.	14, 1906	1,000,000	915,588	1 00	45,000 00	.....	....	45,000 00	Jan.	1,	1907
Temiskaming and Hudson Bay Mining Co. Ltd.	July	29, 1903	25,000	7,761	1 00	1,940,250 00	.....	....	1,940,250 00	Nov.	10,	1914
Hudson Bay Mines, Ltd.	July	16, 1909	3,500,000	3,200,050	5 00	778,909 42	.....	....	778,909 42	Aug.	31,	1913
Total from Silver Companies	.....	.....	.....	.....	.....	59,770,912 70	5,519,257 64	....	65,290,170 34			
Total dividends	.....	.....	.....	.....	.....	65,125,787 70	9,951,007 64	....	75,076,795 34			

* Hollinger Consolidated Gold Mines Limited is a consolidation of the Acme Gold Mines Limited, Millerton Gold Mines Limited, and Hollinger Gold Mines Limited. The properties of the several companies were contiguous, and were largely owned by the same group of persons. All are now being operated through one central shaft, and all ore is treated in the one mill. The accounting of the Consolidated Company dates from January 1st, 1916.

** Acme Gold Mines, Limited.

† Mining Corporation of Canada, Limited, owns and operates the City of Cobalt, Cobalt Lake and Cobalt Townsite mines. During the year its registry was changed from England to Ontario.

‡ Now owned and operated by Mining Corporation of Canada, Limited.

Refining Bounties

The Metal Refining Bounty Act (R.S.O. 1914, chapter 33) provides a bounty of six cents per pound on the nickel and cobalt produced in Ontario in the metallic form or as the refined oxides, the bounty being based on the metallic contents. The figures given below show the bounties paid for the production of 1916. The Act limits the amount payable as cobalt bounty in any one year to $30,000, so that if a larger quantity is produced than can be paid for at six cents per pound out of the maximum amount, the bounty is subject to a pro rata reduction. This happened in 1916, the excess in production bringing the rate per pound of metallic cobalt contents down to 3.9131 cents. The Act expired 10th April, 1917, and was not re-enacted. Its object, which was to encourage the refining of the complex ores of the Cobalt area within the Province, has been fully attained. The complete treatment of these ores includes the recovery not only of the silver, which is the element of chief value, but also the cobalt, nickel and arsenic which they contain. Five plants have been built since the Act was passed, at Copper Cliff, Orillia, Thorold, Deloro and Welland, respectively. The first has gone out of commission and has been dismantled; the second was burned, while the last three remain actively at work. Nearly 50 per cent. of the silver mined in Ontario is refined at Deloro and Thorold, and large quantities of cobalt and nickel in various forms are produced at these and the Welland plants. In the cobalt oxide trade the Ontario refineries in fact control the output for the world, for competition from other sources of cobalt has been reduced to a minimum since the opening of the Cobalt mines and the establishment of the refining industry here.

The Bounty Act also provided bounties on refined copper, also on arsenic made from mispickel, deposits of which are found in Hastings County and elsewhere, but no copper or arsenic bounties have ever been claimed or earned.

The quantities of cobalt and nickel products made by the several refineries in 1916 and the bounty paid are set out in the following table:—

PAYMENTS UNDER METAL REFINING BOUNTY ACT.

Company.	lbs. Product.	lbs. Metallic Cobalt contained.	lbs. Metallic Nickel contained.	Bounty. Cobalt	Bounty. Nickel.	Total Bounty.
				$ c.	$ c.	$ c.
Canadian Smelting & Refining Co., Ltd.						
Cobalt Oxide	36,137	26,221	.....	1,026 05		
Nickel Oxide	16,156	.....	11,364	.....	681 84	1,707 89
Metals Chemical, Ltd.						
Cobalt Oxide	114,419	81,192				
Cobalt Carbonate	5,723	2,722				
Cobalt Hydroxide	5,966	3,400				
Cobalt Sulphate	54,088	10,942				
	Total..	98,256	.....	3,844 85		
Nickel Oxide	31,264	.....	20,104			
Nickel Sulphate	212,709	.....	44,030			
		Total..	64,134	.....	3,848 04	7,692 89
Deloro Smelting & Refining Co., Ltd.						
Cobalt Oxide	91,548	55,844				
Cobalt Oxide	103,246	65,912				
Cobalt Metal	64,650	60,331				
Cobalt Metal	85,693	80,362				
Cobalt Fines	14,288	13,322				
Cobalt Fines	5,250	4,674				
Stellite	57,792	31,785				
		312,230				
	Less ..	567				
	Total..	311,663	.....	12,195 68		
Nickel Oxide	2,838	.....	2,050			
Nickel Oxide	1,600	.....	1,176			
Nickel Metal	13,305	.....	12,437			
Nickel Metal	28,478	.....	28,161			
			43,824			
		Less...	10,721			
	Total..	.....	33,103	.....	1,986 18	14,181 86
Coniagas Reduction Co., Ltd.						
Cobalt Oxide	338,168	239,186				
Cobalt Metal	94,190	91,326				
	Total..	330,512	.....	12,933 26		
Nickel Oxide	48,478	.....	34,041	.....	2,042 46	14,975 72
Total	.....	.....	.....	29,999 84	8,558 52	38,558 36

In the table below is given the annual and total production, of the chief elements of value, from the mines of Cobalt since they were opened in 1904. As regards the subsidiary elements, nickel, cobalt and arsenic, the table until 1913 proceeds upon the assumption that the ores and concentrates produced at Cobalt contained on the average 1.47 per cent of nickel, 3.20 per cent. of cobalt, and 14.28 per cent. of arsenic. Since that time the figures represent, in the case of nickel and cobalt, the metallic contents of the oxides and other substances produced in the refineries of Ontario, and in the case of arsenic, the recoveries of white, crude and metallic arsenic in the same plants. The latter method necessarily loses sight of so much of these constituents as are contained in the ores and concentrates exported to the United States since it is not customary to assay such consignments for them: but the exports of raw ore and concentrates are yearly becoming less, and now amount, on the basis of the silver contained, to not more than 13 per cent. of the production.

The ores occasionally carry a little copper, as at the Timiskaming mine, where small quantities have been recovered: also bismuth and mercury. The proportion of bismuth is too small to warrant efforts to save it, but the mercury is said to be present in sufficient proportion to prevent losses of that metal when used for amalgamation in the Nipissing process of treating the high-grade ore.

TABLE VII.—TOTAL PRODUCTION, COBALT SILVER MINES, 1904 TO 1916.

Year.	Nickel.		Cobalt.		Arsenic.		Silver.		Total Value.
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Ounces.	Value.	
		$		$		$		$	$
1904....	14	3,467	16	19,960	72	903	206,875	111,887	136,217
1905....	75	10,000	118	100,000	549	2,693	2,451,356	1,360,503	1,473,196
1906....	160	.....	321	80,704	1,440	15,858	5,401,766	3,667,551	3,764,113
1907....	370	1,174	739	104,426	2,958	40,104	10,023,311	6,155,391	6,301,095
1908....	612	.....	1,224	111,118	3,672	40,373	19,437,875	9,133,378	9,284,869
1909....	766	.....	1,533	94,965	4,294	61,039	25,897,825	12,461,576	12,617,580
1910....	504	.....	1,098	54,699	4,897	70,709	30,645,181	15,478,047	15,603,455
1911....	392	.....	852	170,890	3,806	74,609	31,507,791	15,953,847	16,199,346
1912....	429	14,220	934	314,381	4,166	80,546	30,243,859	17,408,935	17,818,082
1913....	377	13,326	821	420,386	3,663	64,146	29,681,975	16,553,981	17,051,839
1914....	(a) 90	28,978	(a) 351	590,406	2,030	116,624	25,162,841	12,765,461	13,501,469
1915....	(b) 35	28,353	(b) 206	383,261	2,490	148,379	24,746,534	12,135,816	12,695,809
1916....	(b) 79	59,380	400	805,014	2,160	200,103	19,915,090	12,643,175	13,707,672
Total.	3,903	158,898	8,613	3,250,210	36,197	916,086	255,322,279	135,829,548	140,154,742

(a) Metallic contents of Nickel and Cobalt oxides respectively.
(b) Metals and metallic contents of all Nickel and Cobalt compounds.

Following is a list of the productive silver mines in operation at Cobalt in 1916:—

PRODUCING SILVER MINES IN 1916.

Company or Owner.	Mine.	P.O. Address of Manager, etc.
Aladdin Cobalt Company, Limited	Chambers-Ferland	Cobalt.
Beaver Consolidated Mines, Limited	Beaver	Cobalt.
Bellellen Syndicate	Bellellen	Silver Centre.
Buffalo Mines, Limited, The	Buffalo	Cobalt.
Casey Cobalt Silver Mining Company, Limited	Casey-Cobalt	New Liskeard.
Christopherson, S., and associates	Reeve-Dobie	Gowganda.
Cobalt Comet Mines, Limited	Drummond	Giroux Lake.
Coniagas Mines, Limited	Coniagas	Cobalt.
Crown Reserve Mining Company, Limited	Crown Reserve	Cobalt.
Glen Lake Cobalt Mines, Limited	Foster	Giroux Lake.
Hargrave Silver Mine, Limited	Hargrave	Cobalt.
Hudson Bay Mining Company, Limited	Hudson Bay	Cobalt.
Kerr Lake Mining Company, Limited	Kerr Lake	Cobalt.
La Rose Mines, Limited	La Rose	Cobalt.
McKinley-Darragh-Savage Mines of Cobalt, Limited	McKinley-Darragh-Savage	Cobalt.
Mercer Silver Mines, Limited	Cart Lake	Cobalt.
Mining Corporation of Canada, Limited, The	Cobalt Lake, Townsite-City	Cobalt.
Nipissing Mining Company, Limited	Nipissing	Cobalt.
O'Brien, M. J.	O'Brien	Cobalt.
O'Brien, M. J.	Miller-Lake O'Brien	Gowganda.
Penn-Canadian Mines, Limited	Penn-Canadian	Cobalt.
Pittsburg Lorrain Syndicate	H.R. 105, or Currie	Silver Centre.
Right of Way Mines, Limited	Right of Way	Cobalt.
Seneca-Superior Silver Mines, Limited	Seneca-Superior	Cobalt.
Temiskaming Mining Company, Limited	Temiskaming	Cobalt.
Trethewey Silver-Cobalt Mine, Limited	Trethewey	Cobalt.
Wettlaufer-Lorrain Silver Mines, Limited	Wettlaufer	Silver Centre.

Copper

The nickel-copper mines of the Sudbury district remain the principal source of the copper of Ontario, and the larger scale upon which the mines were worked during 1916 naturally increased the output of this metal. Bessemer matte produced by the Sudbury smelters to the extent of 80,010 tons contained 22,430 tons of copper, an average of 28 per cent. The production in 1915 was 19,608 tons, the increase for 1916 being at the rate of 14 per cent. At an average valuation of 18.5 cents per pound for the copper in the matte, the quantity produced in 1916 was worth $8,299,051. As in past years, the matte was exported by the two producing companies, the Canadian Copper Company and the Mond Nickel Company, Limited, to New Jersey and Wales, respectively, for refinement. At the works of the former, the copper is recovered in part as blister copper and in part as electrolytic copper: at those of the latter, it is obtained in the form of copper sulphate. The chief market for the last-named product is in the vineyards of the Mediterranean countries as a fungicide. Copper sulphate is also used in Canada and elsewhere along with lime in Bordeaux mixture to check potato blight.

The average monthly price of electrolytic copper in New York for 1916 was 27.702 cents per pound, the highest figure for over 40 years. The demand arising out of the war caused this advance, and a natural result of the high prices was the opening of mines and deposits which, under normal conditions, are unprofitable to work. Copper ore was raised at the Tip-Top mine, west of Port Arthur, and from a newly discovered deposit near Mine Centre. Shipments from both sources were made to the smelter at Trail, B.C. Small quantities also were obtained by developing prospects along the line of the Timiskaming and Northern Ontario railway, and on the north shore of Lake Huron. The Massey mine and a property in the township of Gould, both in the last-named district, produced and shipped a quantity of ore. The product of the old Bruce mines, now owned and worked by the Mond Nickel Company, went to the smelter at Coniston, and is accounted for in the mattes there produced. Some 1,052 tons of copper ore was obtained from the above sources, valued at $33,102.

The non-nickeliferous mines and prospects producing ore in 1916 were as follows:—

COPPER PRODUCERS IN 1916

Name of Operator.	Name of Mine.	Location.	P.O. Address of Manager, etc.
S. W. Ray	Tip-Top	Kashabowie	Port Arthur.
Fallahay and Walter		Strathy tp.	North Cobalt.
A. W. Jackson and H. G. Watkins	Rand Syndicate	Milepost 76, T. & N.O. Ry.	Timagami.
Mine Centre Copper Co.		Mine Centre	Port Arthur.
Sable River Copper Co.	Massey	Sault Branch, C.P. Ry.	
Gould Township Copper Syndicate	Cheney	Gould tp.	Montreal.

Nickel

The year 1916 surpassed any previous one in the production of nickel. There were turned out of the convertors of the Canadian Copper Company and the Mond Nickel Company 80,010 tons of Bessemer matte, the metallic contents of which were 41,299 tons of nickel and 22,430 tons of copper, the matte thus averaging 51.6 per cent. nickel and 28 per cent. copper. As is well known, the mattes produced by these companies differ in the proportions of nickel and copper which they respectively contain. The product of the Canadian Copper Company for last year carried an average of 54.8 per cent. of nickel and 24.0 per cent. of copper, while that of the Mond Nickel Company carried 39.2 per cent. of nickel and 43.3 per cent. of copper. The difference is in large measure due to the composition of the ores treated by the companies. The great Creighton mine which furnishes the bulk of the ore charged into the Copper Company's furnaces is rich in nickel and of fair copper tenor, while the Mond Company's ores have so far contained more copper than nickel.

The ore raised by the Canadian Copper Company from its several mines was as follows:—

	Tons.
Creighton	984,306
Crean Hill	175,000
No. 2	65,651
Vermilion	2,230
Total	1,227,187

Mond Nickel Company:—

	Tons.
Garson	115,392
Victoria No. 1	56,123
Worthington	78,280
Levack	61,284
Total	311,079

The latter also received from the Alexo mine in Dundonald township, 8,288 tons.

The quantities of ore smelted by the respective companies were: Canadian Copper Company 1,167,070 tons; Mond Nickel Company 354,619 tons.

The nickel constituents of the silver ores of Cobalt have not hitherto bulked largely in the nickel production of Ontario, and in point of quantity, they cannot in comparison be regarded as of great importance. Nevertheless, the metallurgical industry depending upon the ores of Cobalt for its raw material has been obliged to deal with the nickel in these ores, and can claim the credit for having produced the first refined metallic nickel made in the Province. At the works of the Deloro Smelting and Refining Company the refined oxide of nickel is smelted in an electric furnace into metallic nickel, of which 79,360 pounds were produced during the year and 42,411 pounds shipped at an average price per pound of 42 cents. Besides yielding metallic nickel, the refineries at Deloro, Thorold and Welland, as already stated in dealing with the silver ores of Cobalt, have produced considerable quantities of refined oxide and nickel sulphate. Details will be found on a previous page.

The production in Ontario of refined nickel and copper on a large scale from the ores of the Sudbury district will soon be an established fact. The International Nickel Company of Canada has been engaged since early in the year in the erection of a refining plant at Port Colborne, where it is intended to treat a considerable part of the Bessemer matte produced at the Canadian Copper Company's works at Copper Cliff. The capacity of the plant at the outset will be 7,500 tons of nickel and a corresponding quantity of copper per annum, but it is expected that in the normal development of the business it will be found desirable to increase the capacity of the plant from time to time.

The British America Nickel Corporation, Limited, is engaged in developing the Murray mine near Sudbury, where a large deposit of ore has been located. A smelter is also in course of construction at the same place. Actual work has not yet been begun on the company's refinery, the initial difficulties regarding the provision of a sufficient supply of hydro-electric power not yet having been overcome.

Report of Royal Ontario Nickel Commission

It is unnecessary to go into details here regarding the nickel industry of Ontario in view of the recent publication of the Report of the Royal Ontario Nickel Commission, which covers the subject practically in all its phases, and deals also with nickel mining and known nickel deposits in all other parts of the world.*

The chapter headings give an idea of the scope of this report. They are as follows: Summary and Conclusions; Agitation for Home Refining of Nickel; The Operating Nickel Companies; Nickel Deposits of the World; Properties and Uses of Nickel and Its Compounds; Non-Ferrous Nickel Alloys; Nickel Steel and Other Nickel Alloys Containing Iron; Smelting Nickel Ores; Refining Processes; Recovery of Metals of the Platinum Group; Recovery and Utilization of Sulphur; Statistics; Taxation of Mines and Mining Industries; Bibliography of Nickel. The Appendix contains the testimony of witnesses who appeared before the Commission together with memoranda, written arguments and other papers submitted by those interested in the subject of the Commission's inquiry, or any part of it. An instrument under the Great Seal of the Province dated 9th September, 1915, directed the Commissioners to inquire into and make report upon "the resources, industries and capacities, both present and future, of this Our Province in connection with Nickel and Its Ores, and at the same time into and upon a just and equitable system of taxation by Our said Province of the mines, minerals and mineral industries thereof." More particularly enumerating the subjects of inquiry, the Commission declared them to be:

(*a*) The modes of occurrence, deposits, supply, mining products, by-products and alloys of nickel in Our said Province and elsewhere, together with the present probable and possible uses thereof, and of such products, by-products and alloys.

(*b*) The smelting, refining, and manufacture of nickel, its ores, products, by-products and alloys within Our said Province and elsewhere, with special reference to treatment, refinement, and employment and uses thereof within the said Province;

(*c*) The demand and market for nickel, its ores and products, by-products and alloys;

(*d*) Nickel and allied industries with their probable development and requirements, and with special reference to their extension and development within Our said Province;

(*e*) Such matters as in your opinion will assist Our Lieutenant-Governor in Council to provide a system of taxation upon mines, mining lands, claims or rights, minerals and industries connected with mining that will be just and equitable and in the best interests of Our said Province;

(*f*) Such further and other matters as in your opinion may relate to or have any bearing upon any of the foregoing subjects of inquiry, having regard to the best interests of this Our Province and of Our Dominion of Canada and of Our Empire.

It will suffice for these pages to quote the conclusions at which the Commissioners arrived on the principal phases of their investigations. They say:—

The two questions that have been uppermost in the numerous discussions that have taken place concerning Ontario's nickel industry during the last twenty-five years are: (1) Can nickel be economically refined in Ontario? (2) Are the nickel deposits of Ontario of such a character that this Province can compete successfully as a nickel producer with any other country? It will be seen that the Commissioners have no hesitation in answering both of these questions in the affirmative.

* Royal Ontario Nickel Commission, Report and Appendix; A. T. Wilgress, Printer to the King's Most Excellent Majesty, Toronto, 1917. Report and Appendix contain in all over 900 pages, also numerous cuts, maps, and plans. The commissioners were George T. Holloway, Associate of the Royal College of Science, and Vice-President of the Institution of Mining and Metallurgy, London, England, Chairman; Willet Green Miller, Provincial Geologist, Toronto; McGregor Young, K.C., Toronto, and Thos. W. Gibson, Deputy Minister of Mines, Toronto, Secretary.

The Commissioners are of opinion:—

1. The nickel ore deposits of Ontario are much more extensive and offer better facilities for the production of nickel at a low cost than do those of any other country. Nickel-bearing ores occur in many parts of the world, but the great extent of the deposits in this Province, their richness and uniformity in metal contents, and the success of the industry point strongly to the conclusion that Ontario nickel has little to fear from competition.

2. Any of the processes now in use for refining nickel could be successfully worked in Ontario, and conditions and facilities are at least as good in this Province as in any other part of Canada.

3. In view of the fact that practically no chemicals are required, that there is a much more complete saving of the precious metals, especially platinum and palladium, and that electric power is cheap and abundant, the most satisfactory method of refining in Ontario will be the electrolytic.

4. The refining of nickel in Ontario will not only benefit the nickel industry, but will promote the welfare of existing branches of the chemical and metallurgical industries, and lead to the introduction of others.

5. The methods employed at the Ontario plants of the two operating companies are modern and efficient, although there are differences in both mining and smelting practice. It is the consistent policy of both companies to adopt all modern improvements in plant or treatment. Even during the present time of acute pressure the Canadian Copper Company has materially increased its output without substantial enlargement of its plant, and the losses in smelting are less both at Copper Cliff and the Mond plant at Coniston than they were a year ago. These companies have each had their experimental stage, neither has asked nor received any government assistance, and both have earned the success which they have achieved.

6. The present system of mining taxation in Ontario is just and equitable and in the public interest, and is the best system for this Province. Any question of change is one of rate rather than of principle. This important question is dealt with at length in Chapter XIII.

Prof. G. A. Guess' Nickel-Refining Process

As is well known, there are three processes employed for the refining of nickel-copper mattes, such as are produced at Sudbury. These are the Orford, the Mond and the Hybinette, respectively, of which the last named alone is electrolytic.

During recent years great progress has been made in the electrolytic refining of various metals. Mention need be made only of the case of zinc, the metallurgy of which has been greatly changed by the successful application of an electrolytic process.

In a country like Ontario where a local supply of chemicals, such as are used in the Orford process, is lacking or expensive, and coal is not produced, but where hydro-electric power is cheap and abundant, electrolytic processes are the most attractive.

With the object of evolving a nickel refining process, that would meet, as far as possible, the conditions prevailing in Ontario, the Royal Ontario Nickel Commission secured the services of Prof. G. A. Guess, of the metallurgical department of the University of Toronto, to investigate the question of refining. He has developed an electrolytic process, for which patents have been secured, that is believed to be of commercial importance. The advantages of such a process are that it employs only small quantities of chemicals, deleterious waste liquors are not produced, and the precious and rare metals—platinum, palladium, iridium, gold, silver and others—are practically entirely saved. This is of great moment now that platinum is at least five times as valuable as gold, and is essential in certain industries which under present conditions are of fundamental importance.

An outline descriptive of Prof. Guess' process is given in his own words in the following paragraphs:

An investigation was carried out for the Royal Ontario Nickel Commission looking toward the working out of an electrolytic refining process for nickel from copper-nickel mattes.*

Briefly, the process was as follows: the matte is crushed to about 20-mesh, roasted to remove sulphur, and leached with 10 per cent. sulphuric acid solution, which extracts about 50 per cent. of the copper and a very small amount of the nickel. The leached residues are dried, reduced and cast into anodes, which are referred to as soluble anodes. The leached liquor is electrolyzed with the soluble anodes to produce electrolytic copper, until the copper content of the electrolyte has reached about 1.5 per cent. copper; beyond this point an impure cement copper is produced at the cathode. Electrolysis is continued for the solution of the copper-nickel anode and the depletion of the copper in the electrolyte, until it is reduced to about 0.05 per cent., or 0.5 grammes copper per litre.

The electrolyte runs next to other tanks containing insoluble lead anodes, and electrolysis continued until the copper content is reduced to 0.013 per cent., or 0.13 grammes per litre.

After the elimination of the copper, and if necessary the small amount of iron, this electrolyte is heated and electrolyzed with insoluble lead anodes, at a very high current density, about 250 amperes per square foot. About half the nickel may be recovered as electrolytic nickel before the solution becomes too acid for economic production of nickel. The acidity is corrected by running the solution to the soluble anode tanks again, or by evaporation and cropping of nickel sulphate crystals, and the use of the acid mother liquor for leaching purposes.

As pointed out in the Nickel Commission's Report,† there was required a certain quantitative relation of copper to nickel in the matte, in order to not accumulate in the process an excess of the soluble anodes. Further work, since the Report, shows how it is possible to control the quantity of soluble anodes to be made.

The percentage of metals extracted from the roasted matte may be increased, and therefore the anode-making material reduced, in two ways, as described in the following tests, the culmination of the result of several experiments.

Copper-nickel matte of the following composition was used: Copper 40.2 per cent., nickel 40.1 per cent., sulphur 18.2 per cent.

1. The matte was crushed to 100-mesh; after roasting for three hours at a low red heat, it was removed and the loosely agglomerated mass rubbed to a powder; roasting was then continued at gradually increasing temperatures up to 800 deg. C. for 30 hours. The water-soluble extraction of the calcines was 22.0 per cent. of the copper and 39 per cent. of the nickel. The extraction with 10 per cent. sulphuric acid solution was 40 per cent. of the nickel and 90 per cent. of the copper.

2. The matte was crushed to 20-mesh and screened through 20 and on 40-mesh. After roasting two to three hours at a low heat it was reground to break up the loosely formed cake. This was re-roasted for three hours at 900 deg. C. It showed no extraction with hot water. The calcines were mixed with twice their weight of hot strong sulphuric—half water, half strong acid by volume—and the mass later extracted with five volumes of water. There was extracted 33.7 per cent. of the nickel and 79.0 per cent. of the copper; 10 per cent. acid solution extracted from these calcines contained practically no nickel and only 40 per cent. of the copper.

Either of these methods would leave a very much reduced quantity of anode-forming metal, and give all the control desired over the quantity of anodes to be made.

A refining operation as above carried out on these mattes yielded 68 grammes of dried slime from the electrolytic soluble anode tank. These slimes had the following analysis:—

Cu. 43 per cent., Ni. 16.2 per cent, S. 27.2 per cent., Fe. 0.4 per cent., Insol. 1.5 per cent.

The precious metal content was as follows:

	Ozs. per ton slime.	Ozs. per ton original matte.
Silver	290.0	7.69
Gold	8.3	.22
Platinum	32.9	.872
Palladium	16.8	.446

* Report Royal Ontario Nickel Commission, p. 479.
† P. 480.

The progress of the nickel-copper mining and smelting industry for the last five years is summed up in the following table:—

TABLE VIII.—NICKEL-COPPER MINING AND SMELTING, 1912–1916.

Schedule.	1912	1913	1914	1915	1916
Ore raised	737,656	784,697	1,000,364	1,339,322	1,572,804
Ore smelted	725,065	823,403	947,053	1,272,283	1,546,215
Bessemer matte produced	41,925	47,150	46,396	67,703	80,010
Nickel contents of matte	22,421	24,838	22,759	34,039	41,299
Copper contents of matte	11,116	12,938	14,448	19,608	22,430
Value of Nickel in matte ....$	4,722,040	5,237,477	5,108,997	17,019,500	20,649,279
Value of Copper in matte ....$	1,581,062	1,839,438	2,080,034	3,921,600	8,299,051
Wages paid ....$	2,357,889	3,291,956	3,131,520	3,581,639	4,920,720
Men employed	2,850	3,512	3,464	4,178	4,730

The quantity of coke used as fuel was 181,520 tons worth $1,163,703, and of wood 26,655 cords worth $95,726. Of the wages paid $2,903,876 was for mining, and $2,016,844 for smelting.

The price of refined nickel on the New York market was quoted at 45 to 50 cents per pound, 5 cents per pound additional being asked for the electrolytic article.

The growth of nickel and copper production at Sudbury from the beginning of the industry is shown by the subjoined diagram.

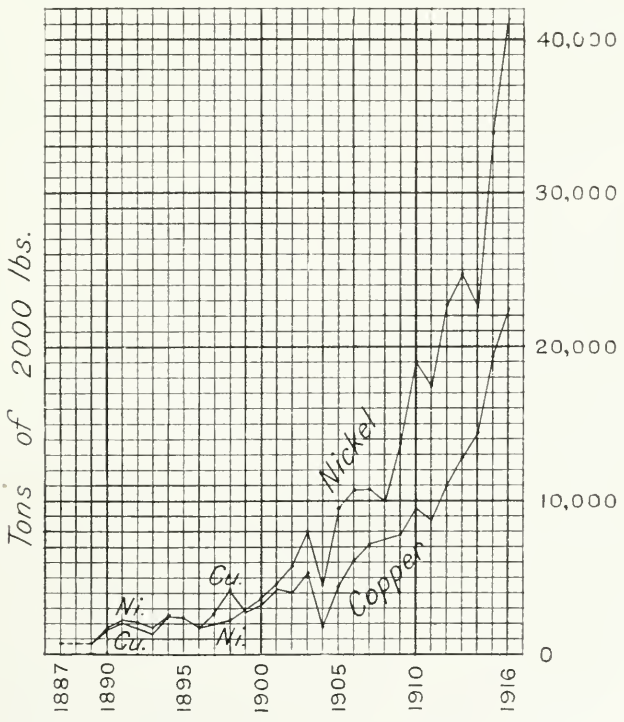


Diagram showing tonnage of nickel and copper produced in the Province from 1887 to 1916.

The companies engaged in mining, or in mining and smelting, nickel-copper ore during the year 1916 were as follows:—

NICKEL-COPPER PRODUCERS IN 1916

Name of Company.	Name of Mine.	Location.	P.O. Address of Manager, etc.
Canadian Copper Company	Creighton, Crean Hill, etc.	Sudbury	Copper Cliff.
Mond Nickel Company, Limited .	Garson, Levack, etc.	Sudbury	Coniston.
A. D. Carmichael	Howland	Sudbury	Bruce Mines.
The Alexo Mining Co., Limited .	Alexo	Dundonald tp. .	Porquis Junction.

Cobalt

Particulars have already been given regarding the production of cobalt from the silver mines of the camp to which it has given its name, and the forms in which it is obtained in the refineries. The raw material for these plants is the ore as it comes from the ground, the concentrates produced by gravitation and flotation methods, and the residues from the mills at Cobalt in which merchantable bars are made. The Nipissing plant, for instance, was a large shipper of such residues.

Until recently the principal use of cobalt was in the manufacture of china and pottery, for imparting the beautiful colour known as "cobalt blue." Samples of glass and other ware coloured in this way have come down from remote times, and the manufacture of cobalt for colouring purposes was a well-known industry in Saxony three hundred years ago.* For such use it is first obtained as the oxide, and then usually transformed into smalt or cobalt glass.

The great development which has taken place within the last few years in the study and production of alloys for special purposes has included cobalt. Metallic cobalt has been found to exert a beneficial action on steel similar to that of nickel, of which it is in nature a close ally. For electro-plating metallic objects in place of nickel, it seems to possess many desirable qualities, except perhaps the important one of cheapness. But cobalt has obtained much success as a component, along with chromium and tungsten, of the alloy known as "stellite," one of the principal uses of which is as metal for high speed tools. Stellite is the invention of Elwood Haynes, of Kokomo, Indiana, and it is rapidly coming into favour for the machining of steel, owing to its hardness, durability and persistency of temper. Much of the metallic cobalt produced in Ontario is for use in making this alloy, which is itself made by the Deloro Smelting and Refining Company in quantities sufficient to supply the Canadian market.

* See Rep. Ont. Bur. Mines, Vol. XIX, Pt. II, p. 234, The Early History of the Cobalt Industry in Saxony, Translation by G. R. Mickle.

Iron Ore, Pig Iron and Steel

The Helen and Magpie mines, in the Michipicoten area, owned by the Algoma Steel Corporation, were the only producers of iron ore in 1916. Consignments from the Helen amounted to 109,965 tons, of which 45,541 tons of hematite went to Sault Ste. Marie for use in the Steel Corporation's blast furnaces there, and 64,424 tons of high sulphur ore to the Magpie mine, where it was dumped down through a raise and blended with ore from the Magpie. When treated in the roasting furnaces at the Magpie, this mixture produced a Bessemer grade of ore.

From the Magpie the shipments amounted to 210,522 tons. Of this 89,027 tons went to the Corporation's plant at the Sault, and the remainder to five different consignees at Cleveland, Buffalo and Milwaukee. The total quantity of ore raised at the Magpie was 233,143 tons; of this about 49,000 tons consisted of the ore brought for treatment from the Helen, leaving about 15,000 tons of the latter still in the mine. The roasted product from the Magpie plant contains about 53 per cent. of iron, and is in high favour with ironmasters in the United States. It carries about 2 per cent. of manganese, and works well in the furnace.

The total quantity of iron ore marketed during 1916 was 256,063 tons, of which 121,495 tons were exported to the United States. Most of the ore made into pig iron in this Province is brought from south of the line, and to some extent no doubt the imports and exports are influenced by the needs of blast furnaces for special grades of ore.

There was an advance of 75 cents per ton in the price of iron ore, as fixed by the market for the Great Lakes product in the United States, and the price for 1917 is to be $1.50 more than that for 1916.

The only company mining iron ore last year was The Algoma Steel Corporation, Limited, which operates the Helen and Magpie mines, and whose head office is at Sault Ste. Marie.

There were seven blast furnaces in operation in 1916, the aggregate output of which was 699,202 tons of pig iron valued at $9,739,704. Of the ore smelted 215,366 tons were from Ontario mines, and 1,056,810 tons were imported from the United States; 17 per cent. only of the total ore used therefore being of domestic origin. The Algoma Steel Corporation at Sault Ste. Marie had three furnaces in operation, the Steel Company of Canada at Hamilton two, and the Canadian Furnace Company, Port Colborne, and Standard Iron Company, Deseronto, one each. Scale and mill cinder were charged into the furnaces to the extent of 25,535 tons. All the plants smelt with coke, except the Standard Iron Company, which uses charcoal. The companies operating with coke return their pig iron product at an average value of $13.34 per ton, while the charcoal pig is valued at $21.46 per ton.

Of the total pig iron produced 465,623 tons were used in making steel, the entire output of which was 686,959 tons. The urgent requirements of the war include none more urgent than that for steel, and the furnaces of this Province have been doing their "bit." In 1915 the total pig iron product was 493,400 tons, of which 329,974 tons were used in making steel, the production of which amounted to 471,059 tons. The increase for 1916 in the tonnage of pig iron produced was 41.7 per cent., and in total steel made 45.8 per cent.

There is in course of erection in the Toronto harbour industrial area, for the Imperial Munitions Board an electric steel and forging plant with an initial capacity of 300 tons of steel daily. The concern known as Imperial Forgings, Limited, will employ ten electric furnaces of the Heroult type, using about 20,000 horse power.

The works of the Electro Metals, Limited, at Welland, turned out a large quantity of ferro-silicon, using as raw materials silica, ganister rock and pyrites ore cinder.

Following are particulars of the iron and steelmaking industry of the Province for the last five years:—

TABLE IX.—PRODUCTION IRON AND STEEL, 1912 TO 1916

Schedule.	1912	1913	1914	1915	1916
Ontario ore smelted .....tons	71,589	132,708	163,779	293,305	215,366
Foreign ore smelted ..... "	1,062,071	1,095,561	752,560	623,094	1,056,810
Limestone for flux ..... "	305,509	351,741	252,258	215,686	296,988
Coke ..... "	660,248	706,852	590,902	486,022	708,273
Charcoal .....bush	1,886,748	2,206,191	920,045	1,314,957	1,843,209
Pig iron produced .....tons	589,593	648,899	556,112	493,400	699,202
Value of pig iron produced ..... $	8,054,369	8,719,892	7,041,079	5,910,625	9,739,704
Steel made .....tons	457,817	648,948	479,320	471,059	686,959
Value of steel made ..... $	8,071,339	11,230,109	7,786,303	7,618,272	12,847,309

The following companies operated blast furnaces in 1916:—

IRON BLAST FURNACES IN OPERATION, 1916

Name of Company.	No. of Furnaces operated.	Fuel used.	Location.
Algoma Steel Corporation, Limited.	3	Coke.	Sault Ste Marie.
Canadian Furnace Company, Ltd...	1	Coke.	Port Colborne.
Standard Iron Company, Limited ..	1	Charcoal.	Deseronto.
Steel Company of Canada, Limited.	2	Coke.	Hamilton.

Lead

At the Galetta mine owned and operated by the Estate of James Robertson, Montreal, where a smelter has been erected, some 6,481 tons of lead ore were raised last year, the concentrates resulting from which amounted to 1,032,559 pounds. No ore was raised at the Hollandia mine, near Bannockburn, but about 50 tons of concentrates were produced. At the works of the Kingston Smelting Company, Limited, over 43 tons of concentrates were smelted. The lead contained in these several lots of concentrates was 796,833 pounds valued at $70,863. This is at 8.7 cents per pound, the average price in Montreal for the year being 8.513 cents per pound, and in New York and St. Louis 6.8 cents. The number of employees in lead mining and smelting was 65, who were paid in wages $35,844. The galena raised at the Galetta mine is only slightly argentiferous.

Molybdenite

Molybdenite is one of those minerals whose usefulness in making metal alloys for special purposes has recently brought them to the front. It is the sulphide of molybdenum, and is found sometimes in flat hexagonal crystals with cleavage not unlike that of mica, but with non-elastic, lead coloured, easily separable leaves; and sometimes disseminated in small crystals throughout the rock in which it occurs. Its most common occurrence in Ontario is in association with pegmatite dikes in gneiss or crystalline limestone.

Since tungsten supplies became scarce and ferro-molybdenum could no longer be procured from Germany, steelmakers in England have been using molybdenum in the manufacture of high speed tool steel, and the British government requisitioned all the molybdenite in the Empire, paying therefor at a rate equal to about $1.00 per pound in Canada for concentrates containing 85 or 90 per cent. MoS_2. The urgency of the demand, and the price offered, have led to considerable search for deposits of molybdenite, and in last year's Report, pp. 17 to 21, the known deposits were enumerated by A. L. Parsons, of the University of Toronto, and particulars of their location and ownership given. Mr. Parsons' full report on Molybdenite in Ontario is printed in the present volume, and will be found of interest.

The Imperial Munitions Board, Ottawa, represents the Imperial authorities in purchasing and forwarding supplies of molybdenite concentrates. A plant for dressing the ore has been installed in connection with the Mines Department, Ottawa, and concentrators have been erected by the International Molybdenum Company at Renfrew, and by the Renfrew Molybdenum Mines Company at Mount St. Patrick. Ferro-molybdenum is also being made at Orillia and Belleville.

The production of molybdenite concentrates in Ontario last year amounted to 24,562 pounds, valued at $26,392. About 893 tons of ore were treated for this quantity. Most of the concentrates were smelted into ferro-molybdenum at Orillia and Belleville, where also a considerable quantity from Quebec was treated. The concentrates from the Mount St. Patrick mill were shipped to France.

The production of concentrates from Ontario ore was as shown in the following table:—

MOLYBDENITE CONCENTRATES, 1916

Concentrator.	Tons ore treated.	Lbs. concentrates produced.
Mines Branch, Mines Dept., Ottawa	190.78	11,349
International Molybdenum Co., Ltd., Renfrew.	450.3	9,204
Renfrew Molybdenum Mines, Ltd., Mt. St. Patrick	86.0	1,248
William J. Spain, Dacre	165.9	2,761
Total	892.98	24,562

The producers of molybdenite ore in 1916 were as follows:—

MOLYBDENITE PRODUCERS IN 1916.

Name.	Location of Deposit.	P.O. Address.
Horscroft, T.	Somerville township..	Norland.
O'Brien, M. J.	Mount St. Patrick...	Renfrew.
Offer, William C.	South Porcupine	South Porcupine.
Padwell, George	Monmouth township..	Wilberforce.
Renfrew Molybdenum Mines, Limited.	Brougham township..	Grand Mere, Que.
Spain, William J.	Dacre	417, Fifth Avenue, New York.
Todd, Frederick G.	Mount St. Patrick...	801 New Birks Bldg., Montreal.
Urquhart, W. J.		Toronto.

Construction Materials

Owing to the scarcity and high cost of labour in 1916 many branches of the building trade were hampered in their operations. There was also a decided falling-off in the demand. In consequence a considerable reduction is recorded in the output, particularly of brick and tile. Over 100 operators reported that their yards had been closed for the year, and the remainder, for the most part, worked on a much reduced scale. The sewer pipe trade experienced similar conditions. The value of the output has increased for the following items: stone, lime, sand and gravel.

Brick, Tile, Sewer Pipe and Pottery

The following table shows the comparative value of the output of clay products since the outbreak of war:—

Year.	Brick.		Pottery.	Drain tile.	Sewer pipe.	Total.
	Common.	Pressed, Fancy, Terra Cotta, etc.				
	$	$	$	$	$	$
1914.....	2,336,207	894,384	25,720	277,530	571,756	4,105,597
1915.....	763,591	375,865	49,387	321,253	361,283	1,871,379
1916.....	509,559	495,895	87,025	275,471	216,749	1,584,699

By far the larger part of the brick manufactured in Ontario is from clay or shale. Sand-lime brick have fallen off in production. Hollow tile construction is on the increase, both for fireproof walls in large buildings and in house construction. Hollow tile are sold by the thousand and also by weight. The 1916 output was worth $176,953. Cement brick and blocks are considered under the heading "Cement."

Fuel costs for burning brick have greatly advanced. The generally increased cost of production has raised the average price of common brick at the works from

$7.96 per thousand in 1915 to $8.43 in 1916. The wages paid in 1916 amounted to $472,044, and the industry employed 1,329 men.

Although some of the larger brickyards operate practically the year round, the season for the small plants is a short one. The average run in 1916 was 109 days, the same as for the preceding year.

Following is a list of the brick and tile operators who had an output in 1916:—

BRICK AND TILE PLANTS.

Name.	Address.	Product.
Alvinston Brick & Tile Co., Limited	Alvinston	Brick and Tile
Armstrong Bros.	Fletcher	Tile.
Attercliffe Standard Brick, Block & Tile Co.	Attercliffe	Tile.
Baird & Son, H. C.	Parkhill	Brick and Tile.
Baker, Geo. E.	Arnprior	Brick and Tile.
Bell Bros.	Paisley	Brick and Tile.
Bemrose, Thos.	Beeton	Brick and Tile.
Bogart Bros.	Southwold	Brick and Tile.
Bond & Bird	Woodstock	Brick.
Brampton Pressed Brick Co., Ltd.	Brampton	Pressed Brick.
Broadwell & Son, B.	Kingsville	Brick, Tile, and Hollow Blocks.
Brown, J. W.	Vienna	Tile.
Brownscombe & Sons, H.	Cargill	Brick and Tile.
Brownscombe, E. N.	Paisley, R.R. No. 2	Tile.
Buck, J. L.	Port Rowan	Brick and Tile.
Butwell, Henry	Toronto	Brick.
Cabana, Jr., Oliver	Zurich	Brick and Tile.
Campbell, Neil F.	West Lorne	Brick and Tile.
Canadian Pressed Brick Co., Limited	Hamilton	Pressed Brick.
Clark, Walter	Corunna	Brick and Tile.
Clemens, Moses	Thamesville	Brick and Tile.
Cooper, W. H.	Hamilton	Brick.
Cornhill Sons, Ltd.	Chatham	Brick.
Crawford Bros.	Hamilton	Brick.
Cumberland, J. M.	Listowel	Tile.
Curtin, Frank	Lindsay	Brick.
Curtis Bros.	Peterboro'	Brick and Tile.
Deller & Sons, Geo.	Norwich	Brick and Tile.
Deller, Wm. H.	Thorndale	Tile.
Dockart Brick & Tile Works	Arnprior	Brick and Tile.
Dolan, John	Watford, R.R. No. 2	Tile.
Dominion Sewer Pipe Co., Limited	Waterdown	Brick and Tile.
Donaldson Bros.	Harriston, R.R. No. 4.	Brick and Tile.
Don Valley Brick Works	Todmorden	Common, Pressed and Fancy Brick, Porous Hollow Blocks, etc.
Elliott, Chas.	Bluevale	Tile.
Elliott & Sons, Jas.	Steelton	Brick.
Eutricken, F. W.	Tavistock	Tile.
Fox, G. J.	Dresden	Brick.
Frank, E. D.	Strathroy	Brick and Tile.
Fraser, Chas.	Blyth	Brick and Tile.
Frid Bros.	Hamilton	Brick.
Frost, Geo. H.	Toronto	Brick.
Fuller, Geo.	Belwood, R.R. No. 2	Tile.
Gardiner, William	Blenheim	Brick and Tile.
Govenlock, J. M.	Seaforth, R.R. No. 1	Tile.

BRICK AND TILE PLANTS.—*Continued.*

Name.	Address.	Product.
Hallatt, H.	Comber	Brick and Tile.
Hamilton Pressed Brick Co., Limited	Hamilton	Pressed Brick.
Hamley, R. H.	Bowmanville	Tile.
Henderson & Angus	North Bay	Brick.
Hepworth Silica Pressed Brick Co., Ltd.	Hepworth	Pressed Brick.
Hill Brick Co.	Madoc	Brick and Tile.
Hill, Aaron	Essex	Tile.
Hill, A. W.	Coatsworth, R.R. No. 1	Tile.
Hinde Bros.	West Toronto	Brick.
Hiscock & Sons	Cobourg	Brick.
Hitch, Mrs. Susan	Ridgetown	Brick and Tile.
Hitch, Thos.	St. Thomas	Brick and Tile.
Hohl & Sons, Geo.	Lisbon	Brick and Tile.
Holland & Son, William	Ruscomb	Brick and Tile.
Holton, F. C.	Clifford, R.R. No. 3	Brick.
Holton, R. J.	Clifford, R.R. No. 3	Tile.
Howlett & Sons, Fred.	Petrolia	Tile.
Interprovincial Brick Co. of Canada, Ltd.	Cheltenham	Pressed Brick.
Irwin Estate, Jas.	Norwich	Brick.
Janes, W. B.	Mitchell	Brick and Tile.
Jaynes, D. A.	Delaware	Brick and Tile.
Jasperson, B.	Kingsville	Brick and Tile.
Jervis & Son, John	Dorchester Station	Brick and Tile.
Johnson, James	Pembroke, R.R. No. 3	Brick.
Johnston, Jos.	West Monkton	Brick.
Jordan, D.	Chatham	Brick and Tile.
Kaar, John	Brownsville	Brick and Tile.
Kerr, Chas	Goderich, R.R. No. 4	Brick and Tile.
Koebel, Joseph Z.	St. Clements	Tile.
Kruse Bros.	Egmondville	Brick and Tile.
Kuhn, Henry J.	Crediton East	Tile.
Lasey & Son, Geo. A.	Foxboro'	Tile.
Leamington Brick & Tile Co., Ltd.	Leamington	Brick and Tile.
Lindsay, Stephen	Wallaceburg, R.R. No. 2	Tile.
Lingham, W. T.	Belleville	Brick.
Logan, John	Toronto	Brick.
Lowe, Jos.	Meaford, R.R. No 1	Tile.
Lowes, Gordon	Kent Centre	Brick and Tile.
MacKay Bros.	Dutton	Tile.
McCormick Bros. & Son	Watford	Tile.
McCredie & Reid	Lyons	Brick and Tile.
McGibbon, Dugald	Shedden	Tile.
Marshall, W. W.	Woodstock	Brick and Tile.
Martin, David	Thamesville	Brick and Tile.
Meaford Brick Co., Limited	Meaford	Brick.
Milton Pressed Brick Co., Ltd.	Milton	Pressed and Fancy Brick.
Miner, J. T.	Kingsville	Brick and Tile.
Morley, Walker	Toronto	Brick.
Napanee Brick & Tile Co., Limited (A. F. Clark, lessee)	Napanee	Brick and Tile.
National Fire Proofing Co. of Canada, Limited	Aldershot	Tile, Fancy Brick and Hollow Blocks.
New, Edward	Hamilton	Brick.
Norton, Alsey	Bolton	Brick and Tile.
Odell & Sons, Wm.	Ingersoll	Brick and Tile.
Ontario National Brick Co., Limited	Cooksville	Brick.

BRICK AND TILE PLANTS.—*Continued.*

Name.	Address.	Product.
Ontario Paving Brick Co., Limited	West Toronto	Paving Brick and Blocks.
Ott Brick & Tile Mfg. Co., Limited	Kitchener	Brick.
Ottawa Brick Mfg. Co., Limited	Ottawa	Brick.
Owen Sound Brick Co., Limited	Owen Sound	Brick.
Parks, H. W.	Dresden	Tile.
Paxton & Bray	St. Catharines	Brick.
Pears & Son, James	Toronto	Brick.
Pembroke Brick Co., The	Pembroke	Brick.
Phillips & Son, Thos.	St. Helen's	Brick and Tile.
Phinn, Geo. E.	Lucan	Brick and Tile.
Port Credit Brick Co., Limited	Port Credit	Common and Pressed Brick.
Price Estate, John	Toronto	Brick.
Provincial Secretary's Department	Mimico	Drain, Floor and Hollow Tile; Brick.
Richardson & Son, James	Kerrwood	Tile.
Ries, John	Carlsruhe	Brick and Tile.
Russell, Joseph	Toronto	Brick.
Sadler, F. L.	Dublin	Brick and Tile.
Silicate Brick Co. of Ottawa, Ltd.	Ottawa	Sand-Lime Brick.
Sipprell, J. H.	Wilkesport	Tile.
Smith Bros.	Port Elgin	Brick.
Snelgrove & Teer	Beaverton	Brick and Tile.
Southorn, Geo.	Coldwater	Brick.
Stickwood, Chas.	Newmarket	Brick.
Stonehouse, W.	West Toronto	Tile.
Strathmeyer, E. F.	London	Brick.
Streetsville Brick Co., Limited	Streetsville	Brick.
Sudbury Brick Co., Limited	Sudbury	Brick.
Sun Brick Co., Limited	Toronto	Fancy Brick and Hollow Blocks.
Thornton, John	Perth	Brick.
Toronto Brick Co., Limited	Toronto	Sand-Lime Brick.
Wagstaff, A. H.	Toronto	Brick.
Wagstaff, Chas.	Lindsay	Brick and Tile.
Waite, J. E.	Foresters Falls	Brick and Tile.
Wallace & Son, R.	North Bay	Brick.
Wallaceburg Brick Co.	Wallaceburg	Brick.
Watson Brick Co.	Bracebridge	Brick and Tile.
Wehlann, Alfred	Cairo	Brick and Tile.
Wehlann, J. A.	Rodney, R.R. No. 2	Tile.
Wood, W. H.	Brockville	Brick.
Wright, J. C.	Proton	Brick and Tile.
Yaeck, Louis	Walkerton.	Brick and Tile.

Sewer Pipe

Three companies made sewer pipe to the value of $206,904 in 1916. Allowing for stocks on hand at the beginning and end of the year, the net production marketed was $216,749. Employees numbering 169 were paid in wages $111,644.

Following is a list of the companies:—

Name of Company.	Location or Plant.	P.O. Address of Manager, etc.
Dominion Sewer Pipe Co., Ltd.	Swansea	Swansea.
Hamilton & Toronto Sewer Pipe Co., Ltd.	Hamilton	Hamilton.
Ontario Sewer Pipe Co., Ltd.	Mimico	Mimico.

Pottery

Only the rougher grades of pottery are manufactured in this Province, no deposits of fine grade clay having as yet been found. Scattered throughout Ontario are several pottery companies that retail imported goods or goods made from imported clays. In 1916 five different makers produced pottery worth $87,025 at the works. Wages amounting to $32,019 were paid 47 employees.

The following is a list of operators in 1916:—

POTTERY PLANTS, 1916.

Name.	Address.
R. Campbell's Sons	Lock St. South, Hamilton.
J. Cranston & Son	210 Dundurn St. South, Hamilton.
John Davis & Son	610 Merton St., Toronto.
Foster Pottery Company	Main St. West, Hamilton.
Geo. M. Taylor	Port Hope.

Lime

The production for 1916 was 1,453,254 bushels valued at $265,356, as compared with 1,340,394 bushels worth $244,953 for 1915.

Small producers are gradually going out of business, the demand for lime being met by larger and better equipped plants. Portland cement is replacing lime to a certain extent for some uses.

For firing the kilns, wood, coal and natural gas are used as fuel, the total value of which amounted to $92,107 in 1916. Employees engaged in lime manufacture numbered 242, and received $140,202 in wages.

Below are given the names of producers and the location of plants in Ontario:

LIME PRODUCERS, 1916.

Name of Owner or Company.	Location.
Annis, Geo.	Orillia, R.R. No. 3.
Beachville White Lime Co., Limited	Beachville.
Bergin, Patrick	Napanee.
Brown, E. A.	Owen Sound.
Cameron, W. M.	Carleton Place.
Canada Lime Company, Limited	Coboconk.
Chalmers, Mrs. Margaret	Owen Sound.
Chestnut, W. D.	Duntroon.
Christie, Henderson & Co., Limited	Puslinch, Kelso, Hespeler and Galt.
Contractors' Supply Co., Limited	Orangeville and Teeswater.
Delta Lime Co., Limited	Delta.
Dominion Sugar Co., Limited	Wallaceburg.
Elora White Lime Co.	Elora.
Fleiler, Edward	Fernleigh.
Gallagher Lime & Stone Co., Limited	Hamilton, R.R. No. 4.
Guest, Mrs. Myra	Ancaster.
Harvey, Limited, E.	Rockwood.
Higginson & Stevens	Hawkesbury.
Jamieson Lime Co.	Renfrew.
Jamieson, J. M.	Forrester's Falls.

LIME PRODUCERS, 1916.—*Continued.*

Name of Owner or Company.	Location.
Moore, Jas.	Foxmead.
MacKenzie Bros.	Lucknow, R.R. No. 5.
Marshall Lime & Cement Works, Jas.	Hamilton.
Robertson Co., Limited, D.	Milton.
Robillard & Son, H.	Ottawa.
Rubel Bros.	Jordan.
Smith, John S.	Inverhuron.
Standard Chemical Iron & Lumber Co., Limited	Eganville.
Standard White Lime Co., Limited	Beachville, Guelph, and St. Marys.
Toronto Lime Co., Limited	Limehouse and Dolly Varden.
Toronto Brick Company, Limited	Coboconk.

Portland Cement

The quantity sold in 1916 shows a small decline as compared with 1915. Building construction was hampered through scarcity of labour. Barrels of cement marketed were 2,143,949, valued at $2,242,433, while the 1915 figures were 2,302,242 and $2,534,537, respectively. The average price per barrel dropped from $1.10 to $1.05. Cement on hand at the end of year totalled 380,458 barrels.

The following cement plants operated in 1916:—

PORTLAND CEMENT PLANTS, 1916.

Name of Company.	Location of Plant.	P.O. Address of Manager, etc.
Canada Cement Company, Limited, Plant No. 5	Thurlow tp., near Belleville	Herald Bldg., Montreal, Que.
do do do No. 8	near Port Colborne	do do
The Hanover Portland Cement Co., Limited	Hanover	Hanover.
National Portland Cement Co., Limited	Durham	Durham.
The Ontario Portland Cement Co., Limited	Blue Lake	Brantford.
St. Marys Portland Cement Co., Limited	St. Marys	St. Marys.
Union Cement Co., Limited	Owen Sound	Owen Sound.

In addition to the manufacture of Portland cement from clay and limestone or marl, the making of cement brick and blocks for wall construction, and of cement tile for drains and culverts, has grown to some importance. For the year 1916 a full report of the industry was attempted for the first time. Through the co-operation of C. A. Millar, Inspector for the Workmen's Compensation Board, the names of a fairly complete list of operators were secured. Returns from these show that some 244 thousand brick and blocks worth $10,684 were produced, also 1,718 thousand tile and sewer pipe valued at $46,946. The industry employed 73 men who received $15,512 in wages, and the average duration of operating the plants was 109 days.

The following is a list of operators reporting to the Bureau of Mines:—

MANUFACTURERS OF CEMENT BLOCKS, BRICK AND TILE.

Name.	Address.	Product.
Alcock, R. B.	Brussels	Tile.
Andrews, S. J.	Clinton	Tile.
Begg, Jas.	Lindsay	Tile.
Beuglass, Jas.	Bright	Tile.
*Brennan & Hollingworth	Hamilton	Tile.
*Colvin, M. N.	Komoka	Blocks and Tile.
Corinthian Stone Co.	Guelph	Sills, Lintels, etc.
*Corlett, A. S.	Leamington	Brick.
Deline, L.	Enterprise	Blocks and Tile.
Deveney & Campbell	St. Marys	Blocks and Tile.
de Jersey, O. W.	Forest	Blocks.
Dillon, Jno.	Seeley's Bay	Blocks and Tile.
*Dominion Concrete Co.	Kemptville	
Fletcher and Sons, J. H.	Fonthill	Blocks.
Hay & Son, J. C.	Listowel	Tile.
Hoy, William J.	Prescott	Brick, Blocks and Tile.
Harper & Sons	Cobden, R.R. No. 1	Tile.
Hornsby, Jno. T.	Lindsay	Tile.
Hyndman, Jno.	Gorrie	Tile.
Iler Concrete Tile Co.	Arner	Tile.
Karr & Rose	Petrolia	Tile.
Kilgour, D. G.	Eganville	Brick and Blocks.
Kimzel & Son, Jos.	Preston	Brick, Blocks and Tile.
*McDougall Bros.	Beaverton	Tile.
McLenaghan, W. A.	Essex	Blocks and Tile.
McQueen, Alex.	Arthur	Tile.
Malcolm, Jno.	Fergus	Sills, Lintels and Tile.
Mitchell, Frank	Pickering	Tile.
Moore, D. G.	Ailsa Craig	Blocks and Tile.
Oil Springs Tile & Cement Co.	Oil Springs	Blocks and Tile.
Ord, John A.	Guelph, R.R. No. 3	Tile.
Pfaff, W. E.	Hensall	Blocks and Tile.
Philp, Wm.	Whitevale	Brick, Blocks and Tile.
Pinchin, J. H.	Clarkson	Tile.
Reid, Russel	Tiverton, R.R. No. 2	Tile.
Schmidt, J. T.	St. Jacobs	Brick, Blocks and Tile.
Schram, A. J.	Camlachie	Tile.
Smith, A. G. C.	Acton	Blocks and Tile.
Stickwood, Thos.	Sharon	Tile.
Taylor & Hall	Peterboro'	Blocks and Tile.
*Webster Construction Co., Limited	London	Tile.
Williams, E. J.	Wheatley	Blocks and Tile.
Wyatt, W. J.	Cottam	Blocks and Tile.

* Idle in 1916.

Sand and Gravel

There is a considerable business done in the raising of sand and gravel, chiefly for construction and road-making purposes. The quantity obtained in 1916 was 470,963 cubic yards, valued at $212,123. The figures for 1915 were 670,510 cubic yards, worth $178,288; hence in 1916 there was a falling off in quantity, but an increase in value. Much of the material is taken from the beds of the great lakes and connecting rivers by means of "sand suckers" or dredges, and is in large part exported to lake ports in the United States, such as Detroit,

Cleveland and Buffalo. The St. Clair and Detroit rivers; off Point Pelee and Pelee island; at Port Maitland; near Strawberry island in the Niagara river; off the mouth of the Niagara river, and elsewhere, the sand and gravel brought down and deposited by current and wave action are availed of to supply the requirements of builder and roadmaker. In addition, the large number of sand and gravel pits on dry land are constantly being drawn upon for local needs of a similar kind. In most of the settled parts of Ontario these products of glacial activity are plentiful, but in the flat lands of the southwestern peninsula they are relatively scarce and consequently dear. Hence the importance of the large supplies found in the lake and river bottoms.

Regulations have been framed by which the Department of Lands, Forests and Mines is authorized to grant licenses for the removal of sand and gravel from deposits under the waters of the great lakes and tributaries, the license being operative until the 31st of December following their date, and payment of a stipulated charge per cubic yard being required. This charge varies according to the extent of the deposit, the distance from market, etc., running from three to twelve cents per cubic yard. Permission has been given to municipalities to take sand and gravel from adjoining lake beds without charge when required for the construction or improvement of roads. The revenue from sand and gravel licenses in 1916 amounted to $14,680.41.

Following is a list of the sand and gravel operators who have made returns to the Bureau of Mines for 1916:—

SAND AND GRAVEL OPERATORS, 1916.

Name.	Material.	Address.
Armstrong Supply Co., Limited	Sand and Gravel..	Hamilton.
Barnes, William	Sand	Hamilton.
Barton Sand and Gravel Co., Limited	Sand and Gravel..	Bartonville.
Battle, Jos.	Gravel	Thorold.
Cadwell Dredging Co., Limited	Gravel	Windsor.
Canadian Sand & Gravel Co., Limited	Gravel	Thorold.
Clifton Sand Company	Sand and Gravel..	Stamford.
Cobourg & Baltimore Gravel Road Co.	Sand and Gravel..	Baltimore.
Confederation Sand and Gravel Co., Limited	Sand	St. Catharines.
Constructing and Paving Co. of Ontario, Limited	Sand and Gravel..	Toronto.
Crow, H. E.	Sand and Gravel..	Chatham.
Downey & Sons, I. J.	Gravel	Sault Ste. Marie.
Empire Limestone Co.	Sand	Buffalo, N.Y.
Forwell, Jos. K.	Sand and Gravel..	Kitchener.
Godson Contracting Co., Limited	Sand and Gravel..	Toronto.
Goodale, Emerson	Sand and Gravel..	Hamilton.
Gould, Francis E.	Gravel	Cleveland, O.
Hamilton Sand and Gravel, Limited	Sand and Gravel..	Hamilton.
Hansen, H. C.	Sand and Gravel..	Cleveland, O.
Johnson, H. L.	Sand	Toronto.
Kingston Sand and Gravel Co.	Sand	Kingston.
Lindsay, Corporation of	Sand and Gravel..	Lindsay.
Lyons Fuel Co.	Gravel	Steelton.
Maple Sand, Gravel and Brick Co., Limited	Sand and Gravel..	Toronto.
McMurray, Geo.	Sand and Gravel..	London.
Niagara Sand Corporation	Gravel	Welland.
Ollman Bros.	Sand and Gravel .	Hamilton.
Oneida Lime Co., Limited	Sand	Buffalo, N.Y.

SAND AND GRAVEL OPERATORS, 1916.—*Continued.*

Name.	Material.	Address.
Ontario Sand Company	Sand and Gravel..	Niagara Falls.
Oshawa, Corporation of	Gravel	Oshawa.
Peterboro, Corporation of	Gravel	Peterboro.
Prescott, Corporation of	Gravel	Prescott.
Rideau Canal Supply Co.	Sand	Ottawa.
Roesand Company, Limited	Sand and Gravel..	Erin.
Sand and Supplies, Limited	Sand and Gravel..	Toronto.
Soo Dredging and Construction Co., Limited	Gravel	Sault Ste. Marie.
Soo Dredging and Towing Co.	Gravel	Sault Ste. Marie.
Stamford Sand Co.	Sand and Gravel..	Niagara Falls.
United Fuel and Supply Co.	Gravel	Detroit, Mich.
Whiting & Son, R.	Gravel	Copleston.
Windsor Sand and Gravel Co., Limited	Sand and Gravel..	Walkerville.
Windsor, Essex & Lake Shore Rapid Ry. Co.	Sand and Gravel..	Kingsville.
York Sand and Gravel Co., Limited	Sand and Gravel..	Toronto.

Stone

Classified according to variety rather than uses, the quarry products of the Province for 1916, together with comparative figures for 1915, were as follows:

——	Limestone.	Sandstone.	Trap.	Granite.	Marble.	Quartz.
	$	$	$	$	$	$
1915.....	587,000	5,500	32,100	15,500	10,600	142,354
1916.....	625,628	14,268	91,762	23,655	.....	223,514

Limestone is by far the most important, both as to variety of uses and value of production. The above valuation does not include limestone quarried for lime manufacture. Trap is a hard, tough, volcanic rock admirably suited for road metal when crushed. It is used extensively also for concrete road construction, although cheaper varieties of crushed stone serve for most concrete work. Long freight hauls increase the price of trap to so high a figure as to prevent its use in certain parts of the Province. Granite is quarried chiefly for paving blocks. The ornamental marble in Ontario comes from Hastings and Lanark counties, while white marble is quarried in Hastings and Renfrew. It is unfortunate that the public is slow in its appreciation of the beautiful marble that may be had from Bancroft and elsewhere in the Province. In 1916 the production of marble was nil. A large part of the quartz produced is used by the Canadian Copper Co. as a smelter flux in the production of nickel-copper matte. In the Coniston smelter the Mond Company use quartz obtained from Bruce Mines. This quartz carries copper which is recovered in the nickel-copper matte. Electro-Metals, Limited, at Welland, employ quartz in considerable quantities in the manufacture of ferro-silicon.

Below are given the names of quarry operators in 1916, classified according to product:—

LIMESTONE AND SANDSTONE QUARRIES.

Name of Owner, Firm or Company.	Location.	Kind of Stone.
Amherstburg Stone Quarry	Amherstburg	Limestone.
Beachville White Lime Co., Limited	Beachville	do
Bergin, Patrick	Napanee	do
Britnell & Co., Limited	Burnt River	do
Canada Crushed Stone Corporation, Limited	Dundas	do
Coast & Lakes Contracting Corporation	Windmill Point	do
Cook, J. S.	Wiarton	do
Canadian Towing and Wrecking Co., Limited	Port Arthur	Rubble.
Contractors' Supply Co., Limited	Orangeville	Crushed Limestone.
Crushed Stone, Limited	Kirkfield	do do
Empire Limestone Co., Limited	Sherkston	do do
Farr, Mrs. C. C.	Haileybury	Limestone.
Fretz, Jacob M.	Vineland	do
Gallagher Lime & Stone Company, Limited	Hamilton	do
Hagersville Contracting Co., Limited	Hagersville	do
Hagersville Crushed Stone Co., Limited	Hagersville	do
Hamilton, Corporation of	Hamilton	do, crushed.
Henderson Farmers' Lime Co.	Woodstock	do, ground.
Kennedy, R. C.	Guelph	Limestone.
Kingston, Corporation of	Kingston	do, crushed.
Lally Estate	Smithville	Limestone.
Longford Quarry Co., Limited	Longford Mills	do
MacDonald, Jos. H.	Point Anne	do
McMillan, Jos. H.	Dunbar	do
Markus, Ltd., Wm.	Pembroke	do
Marshall, James	Hamilton	do
Michigan Central Railway	Hagersville	do
Oliver-Rogers Stone Co., Limited	Owen Sound	do
Ontario Rock Co., Limited	Belleville	do
Ontario Stone Corporation, Limited	Uthoff	do
Perkins, Geo. A.	Owen Sound	do
Point Anne Quarries, Limited	Point Anne	do
Queenston Quarry Co., Limited	St. Davids	do
Quinlan & Robertson	Crookston	Limestone.
Reid, C. F.	Odessa	do
Rideau Canal Supply Co., Ltd.	Ottawa	do, crushed.
Robertson, D., & Company, Limited	Milton	Sandstone.
Robillard, H., & Son	Ottawa	Limestone.
Roddy & Monk	Kingston	do
Rogers Company, F.	Terra Cotta	Sandstone.
St. Marys Horse Shoe Quarry, Limited	St. Marys	Limestone.
Standard Crushed Stone Company, Limited	St. Davids and Windmill Point	do
Standard White Lime Co., Limited	Beachville, Guelph, and St. Marys	do
Thames Quarry Company, Limited	St. Marys	do
Tietz, Wm. A.	Waterford, R.R. No. 4	do
Walker Bros.	Thorold	do
Welland County Lime Works Co., Limited	Port Colborne	do
Wentworth Quarry Co., Limited	Vinemount	do
Wilson, G. S.	Manion	Sandstone.

GRANITE AND TRAP QUARRIES.

Name of Owner, Firm or Company.	Location.	Kind of Stone.
Bannerman & Horne	Ignace and Butler	Granite Blocks.
Bruce Mines Trap Rock Co., Limited	Bruce Mines	Trap.
Gordon & Bruce	Lyndhurst, R.R. No. 2	Granite.
Gordon Granite Co., D. J.	Gananoque	Granite Blocks and Monuments.
Granite, Crushed and Dimension, Limited	Washago	Granite Road Metal.
Grant & Son, Jno.	Actinolite	Granite Blocks.
Ontario Rock Co., Limited	Preneveau	Trap.
Oscar Daniels Company	St. Joseph Island	Trap.
Street & O'Brien	Gananoque	Granite Paving Sets.

QUARTZ QUARRIES.

Name of Owner, Firm or Company.	Location.	P.O. Address of Manager, etc.
Canadian Copper Company, Limited	Dill	42 Exchange Place, New York.
Canada Pebble Company, Limited	Jackfish	Jackfish.
Dominion Mines and Quarries, Limited	Port Neebish	Sault Ste. Marie, Mich.
McPhail & Wright Construction Co., Limited	Mile 21, A. C. Ry.	Sault Ste. Marie.
Mond Nickel Company, Limited	Neelon tp.	Coniston.
Willmott & Company	Killarney	404 Lumsden Bldg., Toronto.

Arsenic

Statistics of production of arsenic have already been given in connection with the operation of the silver refineries. Shipments during the year amounted to 4,321,480 lbs., worth $200,103. By far the larger part of the product was the refined oxide, or white arsenic. About 90 tons of crude oxide were sold, and also over 41 tons of arsenic metal.

The entire output of the year was obtained in the refining of the silver ores of the Cobalt area, but there are other sources of supply in Ontario, if prices and demand should warrant their being called upon. Among these is the county of Hastings, where extensive deposits of mispickel exist, some of it auriferous. The gold-arsenic ores of this locality furnished large quantities of white arsenic when the mines were in operation a number of years ago. Arsenical ores are also found in the neighbourhood of lake Timagami and elsewhere.

Corundum

The only producer is Manufacturers Corundum Company, Limited, whose mines and works are at Burgess Mines in the county of Hastings. The quantity of grain corundum marketed in 1916 was 134,810 pounds, valued at $8,763.

Corundum is used as an abrasive, but of late years it has met with active competition from various artificial products, intended for the same purpose, made chiefly in the electric furnace.

Feldspar

The quantity of feldspar shipped from the several properties operated last year was 12,965 tons, as compared with 12,649 tons in 1915. The principal producer was the Kingston Feldspar and Mining Company, Limited, whose property in the township of Bedford was taken over in June by Feldspars, Limited. It was in operation throughout the whole of the year. Other producers were the Canada Feldspar Corporation, Limited, near Verona; S. W. Hall, Macaulay township, Muskoka, and J. M. Stoness and Son, Crow Lake.

Practically the entire production is exported to Ohio and New Jersey, for use in the manufacture of pottery and enamelled ware. There has been considerable inquiry for workable feldspar properties high in potash, stimulated by the efforts that have been and continue to be made to put this constituent in form suitable for fertilizing purposes. Other uses, such as in making detergent products, call for limited quantities.

Though a common mineral in rock structures, it is only when it occurs in masses free or nearly free from quartz and other impurities, that feldspar can be worked. It will be seen from the description given by Dr. W. G. Miller and C. W. Knight in another part of this Report, it was in a feldspar quarry near Maberley that the radium-carrying mineral euxenite was found.

Following are the companies or individuals engaged in the production of feldspar:—

FELDSPAR PRODUCERS, 1916.

Name.	Location of Deposit.	P.O. Address.
Canada Feldspar Corporation, Limited ...	near Verona	168 Madison Ave., Toronto.
Feldspars Limited	Bedford tp.	Hartington, R.R. No. 1.
S. W. Hall	Macaulay tp.	118 Barton Ave., Toronto.
*McDonald Feldspar Co., Limited	near Verona	58 King St. W., Toronto.
*Ojaipee Silica-Feldspar Mines	Conger tp.	375 Spadina Ave., Toronto.
J. M. Stoness and Sons	Crow Lake	Westport.

* Idle in 1916.

Fluorspar

The increased demand for fluorspar has come largely from steelmakers. It is used chiefly as a flux, but also in the manufacture of hydro-fluoric acid, and in certain metallurgical operations. A newer use is in the recovery of potash from feldspar and from Portland cement clinker.

The last previously reported production of fluorspar was in 1911, when $200 worth was marketed. In 1916 the shipments amounted to 1,283 tons, valued at $10,146, the price averaging nearly $8 per ton. It all came from the vicinity of Madoc. During the year the price rose rapidly, and towards the close $15 per ton was being paid. Early in 1917 still higher prices obtained. Employees to the number of 31 received $8,449 in wages.

FLUORSPAR OPERATORS.

Name.	Location.	Address.
Cross & Wellington	Lot 11, Con. XIII, Huntingdon	Madoc.
C. R. Ross	Lot 2, Con. IV, Madoc	Madoc.
Wellington & Munro	Lot 13, Con. XII, Huntingdon.	Madoc.

Graphite

There were three producing properties in 1916, those of the National Graphite Company, Limited, Monteagle township; Black Donald Graphite Company, Limited, Brougham township, and The Globe Graphite Mining and Refining Company, Limited, Port Elmsley. The total quantity of refined graphite marketed by these concerns was 3,446 tons, valued at $249,586, a considerable advance over the production of 1915, namely, 2,534 tons worth $115,274. The number of employees, in the mills and underground, was 227, to whom were paid wages amounting to $133,960. All three companies mentioned have works for refining the graphite.

As is well known, graphite is used as a lubricant, for making lead pencils, as facing for foundry purposes, stove polish, etc. The flake variety, specially adapted for the manufacture of crucibles, brings the highest price.

Graphite is one of the minerals in which nature is emulated by man. The artificial variety, made in the electric furnace from powdered coke, is in good demand especially for electrodes for lighting and furnace work.

The graphite producers are as follows:—

GRAPHITE PRODUCERS, 1916.

Company.	Location of Mine.	P.O. Address.
Black Donald Graphite Co., Limited	Brougham tp.	Calabogie.
National Graphite, Limited	Monteagle tp.	402 Lumsden Building, Toronto.
The Globe Graphite Mining and Refining Co., Limited	Port Elmsley	410 Dillaye Building, Syracuse, N.Y., U.S.A.
J. G. Allan	near Denbigh	27 Hillcrest Avenue, Hamilton.
Tonkin-du Pont Graphite Co., Limited	Maynooth†	309 Church St., Phoenixville, Pa., U.S.A.

*Idle in 1916. † Refinery at Wilberforce.

Gypsum

The output comes from the valley of the Grand river. Two companies, the Alabastine Company, with mines at Caledonia and a manufacturing plant at Paris, and the Crown Gypsum Company, with mines and works at Lythmore, operated during the year. These companies formed an amalgamation under the name of The Ontario Gypsum Company, Limited, to take effect 1st January, 1917. Production was reduced as compared with 1915, there being a total output of crude of 39,393 tons, as compared with 85,414 the previous year. There were shipped in the

form of crushed crude 10,718 tons, ground crude 2,684 tons, and calcined crude 5,443 tons. The quantity of gypsum in the manufactured products, such as wall plaster, alabastine, etc., was 17,823 tons. There is a certain demand for unmanufactured gypsum as a fertilizer, and for use in Portland cement to regulate the rate of setting.

The large deposits of gypsum reported from the banks of several of the rivers running into James Bay are as yet too remote from transportation facilities and markets to be worked.

GYPSUM MINES, 1916.

Company.	Location of Mine.	P.O. Address.
The Alabastine Co. of Paris, Ltd.	Caledonia	Paris.
Crown Gypsum Company, Ltd.	Lythmore	Lythmore.

Iron Pyrites

An upward trend in pyrite shipments, beginning in 1913, has continued steadily to date. The 1915 production was more than double that for 1913, while the 1916 output marketed shows an increase in tonnage over 1915 of nearly 21 per cent., and in value over 33 per cent., the output for the year being 175,593 tons, worth $471,807. A new shipper and the largest in 1916 was the Goudreau mine of the Madoc Mining Company. This mine is situated on the Algoma Central railway. Another new shipper was T. B. Caldwell, of Lanark, who opened up a property near Flower station on the Kingston and Pembroke railway. The restricted production from Northpines near Superior Junction on the National Transcontinental railway was due to a complete overhauling of the mine equipment preparatory to beginning production on a greatly increased scale.

Sulphur is in great demand owing to the stoppage of European supplies. Several large chemical companies in the United States who use sulphur ore are seeking to purchase properties in this Province. The Nichols Chemical Company, at Sulphide, and the Grasselli Chemical Company, of Hamilton, are purchasers of pyrite ore for treatment in their acid plants.

During the year 117 men were employed who received wages amounting to $111,368.

IRON PYRITE SHIPPERS, 1916.

Name of Owner, Firm or Company.	Location or Name of Mine.	P.O. Address of Manager, etc.
Algoma Steel Corporation, Limited	Helen	Sault Ste. Marie.
T. B. Caldwell	Clyde Lake Siding	Lanark.
Canadian Sulphur Ore Company, Limited	Queensboro	404 Lumsden Bldg., Toronto.
Madoc Mining Company	Goudreau	Goudreau.
Nichols Chemical Company, Limited	Sulphide	Sulphide.
Northern Pyrites Company, Limited	Vermilion Lake	Northpines.
John T. O'Connor	Timagami	Buffalo, N.Y.

Mica

Rough-cobbed mica mined and raised in 1916 totalled 143¼ tons, valued at $28,330. The bulk of this production was from the Sydenham (Lacey) mine of the Loughborough Mining Company. Trimmed mica worth $27,077 was produced, the quantity being 123 tons. In all 266 tons were obtained worth $55,407, an increase over 1915 of 71 tons and $21,917.

The following properties were operated during 1916:—

MICA PRODUCERS, 1916.

Name of Owner or Company.	Location or Name of Mine.	P.O. Address of Manager, etc.
Dominion Improvement & Development Co.	North Burgess tp.	Perth.
Kent Bros. and J. M. Stoness	Bedford tp.	Kingston.
Loughborough Mining Co., Ltd.	Lacey mine	Sydenham.
S. H. Orser Mica Co.	North Burgess tp.	Perth.
Sydenham Mica and Phosphate Mining Co., Limited	Sydenham	Sydenham.

Natural Gas

In 1916 the production of natural gas was 17,953,396 M. cubic feet worth $2,404,499, an increase of 18 per cent. in output, but a decrease of over 8 per cent. in value, in a year when practically every other commodity advanced in price. The explanation may be found in a decreased domestic and an increased industrial consumption, with low prices to large consumers, by no means an ideal situation from the viewpoint of conservation. Assuming the heat value of 24,000 cubic feet of natural gas to be equivalent to a ton of coal, the price of the latter would have to be as low as $2.64 per ton delivered to compete with natural gas at 11 cents per thousand, which is the cost to large manufacturers in Kent county. Gas fields cannot live forever, and it is only by drilling new wells annually that the supply is maintained. Legislation to control the price of natural gas, or to restrict its use for industrial purposes, would appear necessary if the supply is to be conserved for domestic use.

At the end of the year there were 1,802 producing wells, an increase of 68 over 1915. The industry employed 653 men whose wages amounted to $404,039. Some 2,233 miles of pipe line were reported. This mileage, however, does not include distributing systems in towns and cities.

NATURAL GAS STATISTICS, 1916.

Gas wells drilled in year:		
Productive	135	
Non-productive	38	
		173
Producing wells at end of year		1,802
Miles of gas pipe		2,233
Workmen employed		653
Wages for labour		$404,039
Gas production:		
Quantity (million cu. ft.)		17,953
Value		$2,404,499

The list of natural gas producers for 1916 was as follows:—

NATURAL GAS PRODUCERS, 1916.

Name of Person or Company.	Producing Wells, Dec. 31, 1916.	Township.	P.O. Address of Manager, etc.
†Aikens, Beck and Lalor	18	S. Cayuga, Dunn	Dunnville.
Alabastine Co., Paris, Limited	4	Seneca	Paris.
Aldrich Gas & Oil Co., Limited	9	Rainham	Hamilton.
Azoff Natural Gas Co., Limited	1	N. Cayuga	Canfield.
Barnard-Argue-Roth-Stearns Oil & Gas Co., Limited	1	E. Tilbury	401 Iroquois Building, Buffalo, N.Y.
*Beaver Oil & Gas Co., Limited	23	Romney & E. Tilbury	Buffalo, N.Y.
Bertie Natural Gas Co., Limited	8	Bertie	Ridgeway.
Canadian Gas Co., Limited	37	Romney, Tilbury E.	1426 Dime Bank Bldg., Detroit, Mich.
Canfield Natural Gas Co., Limited	3	N. Cayuga	Canfield.
Cheapside Natural Gas Co., Ltd.	..	.....	Cheapside.
Chippawa Development Co., Ltd.	8	Willoughby	Chippawa.
Chippawa Oil & Gas Co., Limited.	37	Caistor, Canboro and Cayuga	Tavistock.
Coleman, J. A.	4	Wainfleet	Wellandport.
Commonwealth Oil & Gas Co., Ltd.	2	Onondaga	240 King St. E., Hamilton.
Crystal Oil & Gas Co., Ltd.	1	Onondaga	Paris.
Douskin, D.	1	Brantford	Cainsville.
Darling Road Co-operative Gas Co.	6	Canboro, N. Cayuga.	Darling Road.
Deagle, John	1	Onondaga	Middleport.
Dominion Natural Gas Co., Ltd.	714	Lincoln, Wentworth, Elgin, Norfolk and Haldimand (counties)	842 Marine Bank Bldg., Buffalo, N.Y.
Douglas, W. A.	1	Oneida	Caledonia.
Dunn Natural Gas Co., Limited	19	Dunn	Dunnville.
Duxbury, Wellington	1	Walpole	Hagersville.
East Side Gas Co., Limited	7	Sherbrooke	Lowbanks.
Emerson, Troughton & Laidlaw	4	Canboro	Attercliffe Station.
Empire Limestone Co., Limited.	4	Humberstone	Hudson & 4th Streets, Buffalo, N.Y.
Fairbank Estate, J. H.	1	Enniskillen	Petrolia.
Fisherville Gas Co., No. 1	2	Rainham	Fisherville.
Fletcher, J. I.	1	Binbrook	Hannon.
*Glenwood Natural Gas Co., Ltd.	60	Raleigh, Romney and Tilbury E.	Buffalo, N.Y.
Hager, Ham	1	Onondaga	Middleport.
Hamilton Gas & Oil Co., Limited	..	.....	Hamilton.
Helka, Fred	1	Rainham	Fisherville.
Hendee Natural Gas Co.	6	S. Cayuga	Cayuga.
*Holmes Gas Co., Limited	23	Rainham and Walpole	Buffalo, N.Y.
†Home Natural Gas Co.	4	Oneida	Hamilton.
Hoover, D. E.	1	Rainham	Selkirk.
†Hoover, D. E., A. E., and Menno.	8	Rainham	Selkirk.
Hoover, James E.	..	.....	Selkirk.
†Hyde & Snively	..	S Cayuga	Dunnville.
Industrial Natural Gas Co., Ltd.	38	Bertie, Crowland and Humberstone	Port Colborne.

NATURAL GAS PRODUCERS, 1916.—*Continued.*

Name of Person or Company.	Producing Wells, Dec. 31, 1916.	Township.	P.O. Address of Manager, etc.
Jones, James S.	3	Port Maitland (vill.)	Port Maitland.
Jones, Nelson	2	Canboro, Moulton	Attercliffe Station.
Kindy Gas Co., Limited	7	Rainham	Cayuga.
Kindy & Sons, D.	7	Rainham	Selkirk.
Kittinger Gas Co., Limited	5	Moulton	118 E. Eagle St., Buffalo, N.Y.
†Kohler & Aikens	21	Canboro	Dunnville.
Lalor, F. R.	5	Moulton	Dunnville.
Lalor & Vokes	11	Walpole	Dunnville.
Lamb, Alfred	13	Walpole	Selkirk.
†Lamb, Walter B.	11	Walpole	Nanticoke.
Lawson, J. J.	..	.....	Low Banks.
Liesinger-Lembke Co.	1	Humberstone	Buffalo, N.Y.
Marshall Lime & Cement Works Jas.	15	Glanford and Seneca	Hamilton.
Martin, Edward	3	Port Maitland (vill.)	Dunnville.
Mayer, J. E.	..	.....	Buffalo, N.Y.
Medina Natural Gas Co., Limited.	23	Bayham	Chatham.
Midfield Natural Gas Co., Limited	7	N. Cayuga	32 Stinson St., Hamilton.
Mickle, Geo. T., & McKechnie, S..	4	Canboro	Ridgetown.
Moore & Ricker	..	.....	Canboro.
Miner & Melinbecker	1	Humberstone	Humberstone.
†Moote, Melick & Lymburner	10	Canboro	Canboro.
Nanticoke Natural Gas Co., Ltd..	2	Walpole	Nanticoke.
National Gas Co., Limited	72	Rainham, Seneca	503 Bank of Hamilton Bldg., Hamilton.
Niagara Natural Gas & Fuel Co., Ltd.	4	Humberstone	Fenwick.
North Shore Gas Co., Limited ..	10	Rainham	Hamilton.
Northwestern Gas Co., Limited	4	Brant (county)	13 Scott Block, Erie, Pa.
Oil Springs Oil & Gas Co., Ltd...	6	Enniskillen	Oil Springs.
Onondaga Oil & Gas Co., Ltd.....	6	Onondaga	Brantford.
Oxford Oil & Gas Co., Limited..	..	.....	Brantford.
†Patterson, T. H.	17	Seneca	Blackheath.
Port Colborne-Welland Natural Gas & Oil Co., Limited	24	Seneca, Oneida, Onondaga	Port Colborne.
Preston Natural Gas & Oil Co., Ltd..	..	.....	Guelph.
Provincial Natural Gas & Fuel Co. of Ontario, Limited	222	Welland (county)	Niagara Falls.
†Regal Natural Gas Co.	3	Hagersville (village)	Hagersville.
Relief Gas Co., Limited	25	Gainsboro, Wainfleet and Pelham	St. Catharines.
Robinson Road Gas Co.	4	Canboro and Moulton	Dunnville.
Rollston & Bennett	..	.....	Dunnville.
Rose, M. E.	4	Seneca	Blackheath.
Snively, F. L., Gas Co., Limited..	..	.....	Dunnville.
Sparham, Andrew	..	.....	Blackheath.
Springvale Oil & Gas Co., Ltd...	3	Walpole	Hagersville.
Standard Natural Gas Co., Ltd...	33	Onondaga	Buffalo, N.Y.
Sterling Gas Co., Limited	61	Humberstone, Wainfleet and Moulton..	Port Colborne.

NATURAL GAS PRODUCERS, 1916.—*Continued.*

Name of Person or Company.	Producing Wells, Dec. 31, 1916.	Township.	P.O. Address of Manager, etc.
Stevensville Gas & Fuel Co.	3	Bertie	Stevensville.
Sundy Gas Well Co.	3	Canboro	Dunnville.
Telephone City Oil & Gas Co. Ltd.	4	Onondaga	Hamilton.
Union Natural Gas Co. of Canada, Limited	125	Kent and Lambton (counties)	Niagara Falls.
United Gas Companies, Limited..	50	Wainfleet, Moulton and Gainsboro	St. Catharines.
Vansickle, A. W.	2	Onondaga	Cainsville.
Vacuum Gas & Oil Co., Limited..	2	Middleton	292 Rushton Road, Toronto.
Wainfleet & Moulton Gas Co.	3	Middleton	Lowbanks.
Welland County Lime Works Co., Limited	30	Wainfleet	Port Colborne.
Wedrick, M.	3	Walpole	Nanticoke.
Wyley, W.	..		Glanford.

* These subsidiary companies are controlled from the head office of the Dominion Natural Gas Company, Limited, 842 Marine Bank Building, Buffalo, N.Y.

†Purchased by the Dominion Natural Gas Company during the year 1916.

During 1916 there were 173 new wells drilled, of which 38 were dry and 135 producers.

Companies operating 50 or more producing wells are enumerated hereunder:—

Company.	Producing Wells. Dec. 31, 1916.	Miles of Pipe Line.
Dominion Natural Gas Co., Limited	714	641
Provincial Natural Gas & Fuel Co., Limited	222	284
Union Natural Gas & Fuel Co. of Ontario, Limited	125	137
National Gas Co., Limited	72	50
Sterling Gas Co., Limited	61	150
Glenwood Natural Gas Co., Limited	60	54
United Gas Companies, Limited	50	79

The Dominion Natural Gas Company has furnished information in regard to its operations, a synopsis of which follows:—

Wells are located in 21 townships or municipalities, of which Walpole township has 165, Canboro 94, Rainham 92, South Cayuga 81, Woodhouse 48, Seneca 45, Binbrook 42, and lesser numbers in the other municipalities.

The Selkirk field in Norfolk and Haldimand counties, which includes wells in the first five townships above mentioned, shows an average rock pressure of 154 pounds, with a low average of 46 in Moulton township and a high of 210 in Woodhouse. This field shows a low average open flow production of 13,000 cubic feet in Moulton township and high average of 62,000 in North Cayuga.

The Simcoe field in Norfolk county shows 322 pounds average rock pressure, with 210 pounds (low) in Woodhouse and 498 pounds (high) in South Walsingham. A low average production of 15,000 cubic feet is recorded for Port Rowan and high average of 107,000 for Windham.

Wentworth, Lincoln and Haldimand counties comprise the Blackheath field, with average rock pressure of 134 pounds, low average production of 33,000 cubic feet in Caistor township and high average of 66,000 cubic feet in Glanford township.

The Vienna field comprises Bayham township in Elgin county and Houghton in Norfolk. The average pressure in the former is 298 pounds, and production 115,000 cubic feet. In the latter the figures are 500 and 93,000 respectively.

During the year this company acquired by purchase 140 wells owned by nine different producers. The following companies were amalgamated with the Dominion: Waines and Root, Producers' Natural Gas Co., Enterprise Gas Co., Norfolk Gas Co. and Port Rowan Gas Co.

Following is a list of companies which pipe natural gas from the wells to points of consumption or who distribute it there:—

PIPE LINE COMPANIES OR DISTRIBUTORS ONLY OF NATURAL GAS.

Brantford Gas Company, Limited.
Central Pipe Line Company, Limited, Chatham.
Chatham Gas Company, Limited.
Independent Natural Gas Company, Dunnville.
Ingersoll Gas Light Company, Limited.
Lake Shore Natural Gas Company.
Manufacturers' Natural Gas Company, Limited, Buffalo, N.Y.
Nelles Corners Gas Company.
Northern Pipe Line Company, Limited, Buffalo, N.Y.
Petrolia Utilities Company, Limited.
Rose Hill Natural Gas Company.
Sarnia Gas & Electric Light Company, Limited.
Southern Ontario Gas Company, Limited, St. Thomas.
Thorold Gas Company, St. Catharines.
Tilbury Town Gas Company.
Town of Leamington.
United Gas & Fuel Co. of Hamilton, Limited.
Wellandport Natural Gas Company, Wellandport.
Windsor Gas Company, Limited.
Woodstock Gas Light Company, Limited.

Details of Natural Gas Industry

G. R. Mickle, Mine Assessor, who has supervision over the inspection of natural gas wells and the collection of the revenue from natural gas, furnishes the following notes respecting the industry. It will be noted that Mr. Mickle's figures of production compiled from returns made to him for purposes of the Mining Tax Act, do not greatly differ from those procured by the Bureau from the producers.

The amount of natural gas produced in the Province in 1916 was 17,929.1 million cubic feet, an increase of about 18 per cent. over the output of the previous year. This is due almost entirely to greater production from the Kent field. The distribution of the output is as follows:—

	Million Cu. Ft.		Per cent.
1. Welland-Haldimand, etc.	3,769.5	or	21.0
2. Kent	13,752.5	"	76.8
3. Elgin	351.9	"	2.0
4. Lambton	55.2	"	0.2
Total	17,929.1	"	100.

This includes an estimated production from a number of small operators who give no returns.

The first of these fields comprises a number of scattered productive areas extending through the southerly parts of the counties of Welland, Haldimand, Norfolk, Brant, Wentworth. Many of these productive areas are nearly exhausted, and gas from Kent has been

brought into towns which were formerly supplied from adjacent territory. This is throwing a heavy burden on the Kent gas field, and new discoveries of important sources are urgently needed. The desirability of fresh sources of gas is accentuated by the high price of coal. The amount given above as the production is equivalent to about 746,000 tons of coal, reckoning one ton of coal equal to 24,000 cu. ft. of natural gas; this is probably a high estimate of the relative heating value of coal.

The total yield of gas from the Welland-Haldimand field to the end of 1916 is 57,672 million feet, including an estimated production during the early life of the field.

From Kent the production up to the same time amounts to 65,801 million cu. ft., or about 2,000 million cu. ft. from each square mile in this field; at 10 cents per thousand for the gas in the field, this is an output of $200,000 per square mile, with still a great deal more to come. The outstanding feature of the Kent field is its extraordinary productiveness. The production given above is slightly more than the minimum possible yield calculated in 1910 from noting the yield up to that time and the drop in pressure (p. 150, Vol. XIX, Report Bureau of Mines), showing that, as the pressure drops, gas must find its way in from under the bed of the lake.

The total output of the Elgin field from its first production in 1911 is now 2,265.4 million cu. ft. It seems probable that extensions of this will be found, or small similar areas.

The Lambton field at Oil Springs has produced 626 million cu. ft. The wells in this field do not appear to have much life ahead of them.

While no new important discoveries were made in 1916, there was an interesting and possibly important result obtained in the spring of 1917 in Dover township, Kent county, near Lake St. Clair. Gas was found apparently in important quantities at a depth of 3,000 ft. approximately in the Trenton. The discovery was made by the Union Natural Gas Company at a point about ten miles distant from the Kent gas field.

The Bureau of Mines maintains three gas and oil inspectors in the producing areas for the purpose of enforcing the regulations respecting the plugging of abandoned wells, wasting of gas, etc. These are John Scott, Petrolea; A. E. Near, Gas Line, and J. W. Beno, Chatham. Mr. Scott has jurisdiction chiefly over the oil and gas wells in Lambton county and neighbourhood, Mr. Near over the Welland-Haldimand field, and Mr. Beno over the Tilbury area.

The following extracts are from Mr. Near's report:—

During the year considerable drilling has been done, especially by the two largest companies operating in this district—The Dominion Natural Gas Company of Hamilton, and the Provincial Natural Gas and Fuel Company of Niagara Falls, Ontario.

The Dominion Natural Gas Company drilled, during the year 1916, 87 wells, of which 68 were producing wells and 19 non-producing. It also purchased 164 wells, and abandoned 15, leaving it at the close of the year with 737 producing wells. The total open flow production from the company's own wells was 8,176,000 cu. ft., which, together with 1,166,399,000 cu. ft. purchased, enabled it to supply upwards of 34,498 customers. This company also receives a considerable supply of gas from the Southern Ontario Gas Co., Limited, the product from the Tilbury gas field, which is impregnated with sulphur. This gas is now, however, being purified before being used for domestic purposes. Gas from the Tilbury field is also supplied to Brantford, Paris, Galt and other places along the line.

The Provincial Natural Gas and Fuel Company of Niagara Falls, Ontario, during the past year drilled 14 wells in the Welland county gas field, of which only 5 were producing wells, making a total of 222 producing wells owned by this company. The total product of gas from these wells was 664,810,000 cu. ft., with which, and 11,346,000 cu. ft. purchased, it gave a fairly satisfactory supply of gas to its many customers in the city of Niagara Falls, the towns of Welland and Bridgeburg, and the villages of Fort Erie, Stevensville, Ridgeway and Crystal Beach.

During the year 1916 a new company was organized under the style and name of "Vacuum Gas and Oil Co., Limited," 608 Lumsden Building, Toronto; E. P. Rowe, General Manager. It has drilled a number of wells in the township of Dereham, Oxford county.

A second company was formed under the name of American Gas, Gasoline and Oil Manufacturing Company, Limited, of New York; Eugene F. Deiner, of Dunnville, president. This company has a considerable territory of lands under lease in the townships of Moulton and Canboro, Haldimand county.

Mr. Beno reports that 45 new gas wells were drilled and 47 miles of new gas mains laid down in the Kent county field in 1916, the field comprising the town-

ships of Romney, Raleigh and Tilbury East. The total number of gas wells being operated was 259, and the estimated length of all the gas mains now existing is 502 miles, the size of the mains ranging from 3 to 12 inches in diameter. If the distributing systems of the cities, towns and villages, and all the rural lines of 2 inches and under in diameter were included, the aggregate length of the gas lines would be 1,000 miles or more. Mr. Beno adds that the wells in the south-western side of the field are weakening rapidly, and will probably not last long, if they continue to be drawn upon as heavily as at present.

Petroleum

The yield of petroleum in 1916, namely, 6,890,681 imperial gallons* (196,876 barrels) shows a decrease of 8 per cent. as compared with that of 1915. By districts the production for the two years was as follows, in gallons:—

——	1915	1916	Gain.	Loss.
Lambton	5,647,894	4,977,286	.....	670,608
Bothwell	1,168,829	1,184,968	16,139	.....
Dutton	189,046	99,814	.....	89,232
Tilbury	445,957	570,391	124,434	.....
Onondaga	52,160	56,612	4,452	.....
Belle River	1,592	1,610	18	.....
Total	7,505,478	6,890,681	145,043	759,840

Commenting on these figures, Charles Jenkins, of Petrolia, a veteran operator, says:—

Lambton county shows a greater loss than the entire Province. This can be accounted for by surface conditions of pumping. The soil is very heavy clay land, and in the months of April and May and well on into June the wet spring checked very materially the team work necessary to keep the pumps in proper working condition. Again, in July and August the heat and drought were extreme, and the jerker line systems, by virtue of expansion, were continually breaking, requiring repair and delaying pumping. There was thus, therefore, a known loss in production. The Dutton statement does not show the actual loss, if any. The 1915 figures were swelled by 1914 oil carried over and not delivered till 1915.

If Lambton figures are taken for four years and averaged, the production is 152,000 barrels per annum. Without special setbacks in surface working as in 1916, I think the 1915 record would have been nearly attained.

Some prospecting work goes on. I understand some attempts to explore the Trenton vicinity, Lake Erie, are going on. At Thamesville a sustained effort is being made to develop a permanent producing centre, but the territory is shallow.

The price of crude was advanced 10 cents per barrel (35 gallons) on January 3, making it $1.83; two additional gains of 5 cents in January, one in February, another of 5 cents and one of 10 cents in March brought the price to $2.03; by 14th August it had declined to $1.83, at which figure it remained until 18th November, when it rose to $1.88, and closed 31st December at $1.98. The average price during the year for Petrolea crude was $1.94 7-13 per barrel, and for Oil Springs crude $1.99 7-13.

* Figures kindly supplied by Samuel Pollard, Supervisor of Crude Oil Bounties, Petrolia. The bounty of 1½ cents per gallon on crude oil is paid by the Dominion Government.

J. Scott, inspector of oil and gas wells, reports the following figures regarding the wells of the oil district as follows:—

OIL WELLS IN LAMBTON DISTRICT.

Field.	Pumped.	Baled.	Not operated.	Abandoned.	Total.
Enniskillen-Moore	2,347	479	940	344	4,110
Sarnia-Plympton	164	.....	73	7	244
Oil Springs	1,462	.....	89	.....	1,551
Dutton	192	.....	15	.....	207
Euphemia-Dawn	91	.....	50	50	191
Bothwell	195	.....	16	1	212
Thamesville	20	.....	36	3	59
Brooke	10	.....	.....	1	11
Indian Reserve	.....	.....	.....	.....	11
Total	4,481	479	1,230	406	6,596

Inspector Beno reports that in Essex and Kent counties 51 oil wells were in operation in 1916, and 38 were standing idle. Ten new wells were drilled during the year.

Salt

Salt marketed in 1916 exceeded that in 1915 both in quantity and value, the figures for 1916 being 128,935 tons worth $700,515, as compared with 116,648 tons valued at $585,022 in 1915. The output was restricted owing to scarcity of labour. One well at Wingham was lost in January, and the plant not operated until a new well was completed in October. Wages amounting to $208,673 were paid 238 employees. Of the total tonnage marketed 56,325 tons were coarse or land salt, 30,291 tons fine and 30,640 tons dairy. The chemical plant of the Canadian Salt Company at Sandwich, where caustic soda and bleaching powder are produced, used brine equivalent to 11,679 tons of salt.

The following were salt producers in 1916:—

SALT COMPANIES, 1916.

Name of Owner, Firm or Company.	Location of Wells or Works.	P.O. Address of Manager, etc.
Alex Young Estate	Wingham	Wingham.
The Canadian Salt Company, Limited	Windsor, Sandwich	Windsor.
The Dominion Salt Company, Limited	Sarnia	Sarnia.
The Earlton Salt Works Company, Limited	South of Egremont Road, Warwick tp.	Hyde Park.
Exeter Salt Works Company, Limited	Exeter	Exeter.
Ontario People's Salt and Soda Co., Limited	Kincardine	Kincardine.
Western Canada Flour Mills Company, Limited.	Goderich	Goderich.
The Western Salt Company, Limited	Mooretown and Courtright	Courtright.

Talc

Shipments of talc in 1916 exceeded those of the preceding year both in quantity and value. The figures for 1915 were 1,720 tons of crude and 9,285 tons of ground, as compared with 3,665 and 8,145 tons, respectively, in 1916. The total valuation of both crude and ground for 1916 was $111,489, an advance of $26,164 over the preceding year. All the ground talc was produced at the Madoc mill of G. H. Gillespie and Company, which treates 30 to 35 tons of crude daily. Eldorite, Limited, closed down the Eldorado plant on September 1, 1916. The bulk of the crude came from the Henderson mine near Madoc, operated by Cross and Wellington, 1,755 tons being shipped to the United States and 8,436 tons delivered to the Gillespie mill. The Anglo-American Talc Corporation are erecting a mill on their property which adjoins the Henderson mine. Ground talc has a variety of uses such as talcum powder and as filler for cotton, paper, rubber, soap, etc. The industry employed 60 men whose wages amounted to $32,434.

The operators are as follows:—

TALC OPERATORS, 1916.

Firm or Company.	Location of Mine or Works.	Address of Manager, etc.
Anglo-American Talc Corporation, Ltd.	Huntingdon tp. (Connolly mine)..	Madoc.
Cross and Wellington	Huntingdon tp. (Henderson mine)	Madoc.
Eldorite, Limited	Eldorado	Eldorado.
Gillespie, G. H., & Co.	Madoc	Madoc.

Mining Divisions

For purposes of administration under the Mining Act, the mineral regions of the Province are subdivided into Mining Divisions. The officer in charge of a Division is called a Mining Recorder, and all mining claims on Crown lands staked out in the Division must be filed with him. He has power to settle disputes between mining licensees, there being a right of appeal to the Mining Commissioner, whose decisions in important matters are subject to review by the courts of law. The list of Divisions is as follows, with the name and headquarters of the several Recorders, and figures representing the business done by each during 1916. Mining claims staked out on lands not included within the limits of a Mining Division, as for instance, in eastern Ontario and in the Rainy River area, are recorded in the Department of Lands, Forests and Mines, Toronto, which also collects all the mining revenue that does not pass through the hands of the Mining Recorders.

MINING DIVISIONS, 1916.

Mining Division.	Name and P.O. Address of Recorder.	Receipts, 1916.				
		Purchase price.	Permits.	Miner's licenses.	Recording fees.	Total.
		$ c.	$ c.	$ c.	$ c.	$ c.
Sault Ste. Marie	W. N. Miller, Slt. Ste. Marie	532 15	.....	656 00	1,080 00	2,268 15
Sudbury	C. A. Campbell, Sudbury	11,244 07	300 00	2,728 00	6,669 75	20,941 82
Porcupine	G. H. Gauthier, S. Porcupine	8,861 41	330 00	2,890 00	4,841 25	16,922 66
Larder Lake	J. A. Hough, Matheson	5,929 07	.....	2,252 50	11,817 50	19,999 07
Port Arthur	J. W. Morgan, Port Arthur	3,942 38	20 00	2,113 00	5,593 25	11,668 63
Parry Sound	H. F. McQuire, Parry Sound	.....	.....	187 00	178 00	365 00
Gowganda / Montreal River	A. J. Browning, Elk Lake	4,052 03	100 00	726 25	1,310 00	6,188 28
Temiskaming / Coleman	N. J. McAulay, Haileybury	3,532 50	60 00	6,114 00	3,865 00	13,571 50
Kenora	W. L. Spry, Kenora	1,086 25	.....	632 00	656 75	2,375 00
Kowkash	M. R. Morgan, Tashota	.....	60 00	124 00	1,088 65	1,272 65
	Total	39,179 86	870 00	18,422 75	37,100 15	95,572 76

The promising discoveries of gold made in the neighbourhood of Kowkash, on the National Transcontinental railway, made it desirable to establish an office in the field for the recording of claims and the general convenience of prospectors. A tract containing about 17,000 square miles was accordingly detached from the Mining Division of Port Arthur and set apart as the Kowkash Mining Division, with head office at Tashota on the Transcontinental railway. Mark R. Morgan, formerly assistant in the Recorder's office at Port Arthur, was appointed Recorder, 26th May, 1916.

The limits of the Kowkash Division are as follows: So much of the territory as is situated within the Nipigon Forest Reserve remaining subject to the Forest Reserves Act and regulations:—

Commencing at the southeast angle of the township of Henderson, being a point in the boundary line between the districts of Algoma and Thunder Bay 74 chains 48 links north of the 93rd mile post on said District line; thence west astronomically along the south boundaries of the townships of Henderson, Selwyn, Barlow, Goodwin, Chipman and Raynar 54 miles more or less to the southwest angle of the last-mentioned township; thence continuing west astronomically 67 miles more or less to a point on the shore of Lake Nipigon at or near Humboldt Bay; thence in a general direction northwesterly, westerly and southwesterly following the shore line of Lake Nipigon in all its windings to the Wabinosh river, where it enters Wabinosh bay of said Lake Nipigon; thence northwesterly following the south shores of Wabinosh Lake, Waweig or Round Lake, Sucker Lake, Valley Lake, Clear Lake, Tunnel Lake and connecting streams to the west boundary of the Nipigon Forest Reserve; thence north astronomically along said west boundary of the Nipigon Forest Reserve and continuing north astronomically 85 miles more or less to the south shore of the Albany river; thence in a general course easterly along the south shore of said Albany river to its intersection with the boundary between the Districts of Thunder Bay and Algoma; thence south astronomically along the said District boundary line 110 miles more or less to the point of commencement.

Reports from Mining Recorders

The several Recorders, in reporting on the business of their offices at the close of the year, remark on matters of interest to the mining community in their respective Divisions. From these notes the following extracts are made:—

Sault Ste. Marie.—There was some activity in the sulphide ores in township 49, and in copper back of Thessalon. Claims recorded 44, cancelled 21.

Sudbury.—There was no new field opened up, and although business was fairly good, it was confined for the most part to West Shining Tree and the nickel range. It may be interesting to note that the Longyear people made an extensive find of nickel in the township of Falconbridge. The claims were originally staked as working permits, owing to the fact that there was not sufficient rock on the properties to make a discovery, so the claims were really staked with only a map of the nickel range as a guide. However, they went to work with diamond drills and turned up an extensive deposit of low grade nickel ore. Claims recorded 464, licenses issued 225, licenses renewed 346.

Porcupine.—During the year nearly all of the established mines have increased their milling capacity, and a number of others are breaking into the rank of producers, so that a much greater production may be looked for in the year 1917. On every property without exception, where proper development work has been performed, the results have been most satisfactory. This augurs well for the future of the camp, which seems destined to attain even greater importance among the gold camps of the world. A very encouraging feature is the development work performed and results obtained on some properties in Deloro township. If these develop into mines, as they promise to do, it will greatly increase the producing area of the camp. Claims recorded 401, claims cancelled 408.

Larder Lake.—Fire destroyed the office on July 29th, and almost all documents were burned, but all records were saved. Mining continues very busy in this Division, and many new discoveries of merit were made during the year. Claims recorded 783, claims cancelled 157.

Port Arthur.—No new discoveries of much importance were made in this Division during 1916. Many of the prospectors have enlisted for overseas service. The withdrawal of a large portion of the Division from prospecting, and the establishment of the new Division of Kowkash have very much restricted the number of claims recorded. Several large options have been taken by "outsiders" on property in the vicinity of Big Duck lake, and some excellent deposits of gold are said to exist in that part. The gold-bearing rocks are said to extend from the Kowkash and Tashota areas southward along the east of the Nipigon Forest Reserve, and southeasterly to Big Duck lake. This part of the country has not been much prospected, but from reports brought in by experienced men it is probable that 1917 will show a great deal of mining activity between Big Duck lake and Kowkash. Claims recorded 172, cancelled 143.

Parry Sound.—Mica claims in the township of McConkey have been prospected with good results. The demand for potash and experiments undertaken for the utilization of feldspar in connection therewith, have resulted in many inquiries, and a few claims were recorded. Claims recorded 10, miner's licenses issued 36.

Gowganda.—H. E. Sheppard, Mining Recorder, having enlisted for active service, and also Albert Skill, the Recorder for the Montreal River Mining Division, the head office of Gowganda Division was moved to Elk lake, and Arthur J. Browning placed in charge of both Divisions. Business in 1916 was better than in 1915, due partly to the rise in the price of silver, and partly to the finding of a wonderful body of silver ore in the Miller-Lake O'Brien mine. The following properties were operated, in addition to the above mine: Reeve-Dobie, Bishop, Crews-McFarlan. The fire of last summer swept a wide area of the Division, and should make prospecting easier next year. Every care has been taken to see that the claims of enlisted men were safeguarded, but some cases have come to notice where holders have enlisted and have given no notification of the fact. Claims recorded 51, claims cancelled 362.

Montreal River.—A discovery of silver was made in the township of Auld, and great interest was aroused by the finding of gold in Powell township and surrounding territory, some 35 claims having been recorded up to the end of the year. This part of the country is best reached by river from Elk lake. The Kenabeek and Mapes-Johnston properties were worked during the year, and so also was the White Reserve. A large part of the Division was swept by fire last summer. Claims recorded 56, claims cancelled 190.

Timiskaming and Coleman.—There was a slight decrease of business as compared with 1915, accounted for by the great distress in northern Ontario caused by the forest fires, which prevented prospecting, and also the conditions brought about by the war in Europe. Most of the prospecting was done at Boston creek, and towards the close of the year there was some activity near Fort Matachewan, in the townships of Alma, Cairo and Powell. Claims recorded 156, cancelled 447.

Kenora.—Claims recorded 45, claims cancelled 33.

Kowkash.—Business was not brisk, only one mining company operating in the District, and many prospectors having enlisted. Rich discoveries have been made during the last two months. Claims recorded 160, claims cancelled 299.

Mining Companies

More mining and mineral companies were incorporated under the laws of Ontario in 1916 than in 1915, the number being 83 with a total capitalization of $109,079,500, as compared with 59 and an aggregate capital of $42,005,000. Foreign companies licensed to do business in the Province numbered eight with a capital for use in Ontario of $7,011,650, as against two the previous year with capital of $10,200,000.

The lists are as follows:—

MINING COMPANIES INCORPORATED IN 1916.

Name of Company.	Address.	Date of Incorporation.	Capital.
Algoma Construction & Engineering Co., Limited	Sault Ste. Marie	June 26	$100,000
Anzac Porcupine Mines, Limited	Toronto	Nov. 28	1,000,000
Atlas Gold Mines, Limited	Toronto	Feb. 17	2,000,000
Aurum Mines, Limited	Toronto	Oct. 18	1,500,000
Boston Creek Mining Company, Limited	Toronto	Feb. 7	2,000,000
Boston Gold Leaf Mining Company, Limited	Cobalt	April 29	1,000,000
Bruce Mines Trap Rock Company, Limited	Sault Ste. Marie	June 26	150,000
Buff-Munro Gold Mines, Limited	Toronto	Dec. 6	3,000,000
Burton-Munro Mines, Limited	Toronto	Jan. 12	1,000,000
Canadian Mines Location and Development Company, Limited	Toronto	April 27	100,000
Canadian Molybdenite, Limited	Toronto	Sept. 21	100,000
Comfort Mining and Leasing Company, Limited	Cobalt	April 15	40,000
Consolidated Investments, Limited	Toronto	Nov. 15	60,000
Davidson Gold Mines, Limited	Toronto	Aug. 4	2,000,000
Davidson Lake Mining Company, Limited	Toronto	May 20	1,000,000
Dominion Rand Mines, Limited	Haileybury	Jan. 13	500,000
Elliott-Kirkland Gold Mines, Limited	Haileybury	Dec. 2	2,000,000
Elstone Dunkin Mines, Limited	New Liskeard	June 12	1,500,000
Empire State Mines, Limited	South Porcupine	Jan. 29	2,000,000
Federal Securities Corporations, Limited	Toronto	May 20	40,000
Feldspar and Clay Products, Limited	Wiarton	July 19	1,500,000
Frank Mapes Crittenden Company, Limited	Toronto	Oct. 10	50,000
Fulton Mines, Limited	Toronto	Oct. 4	500,000
Gold Bullion Mines, Limited	South Porcupine	Jan. 21	600,000
Groch Centrifugal Flotation, Limited	Cobalt	Dec. 1	25,000
Harland Development and Mining Co., Ltd.	Toronto	Dec. 14	40,000
Hodgson Brothers Chemical Company, Limited	Lindsay	Mar. 10	200,000
Hoidge & Sons, Limited	Toronto	Dec. 19	60,000
Hollinger Consolidated Gold Mines, Limited	Toronto	May 25	25,000,000
Hudson Copper Company, Limited	Thessalon	Nov. 18	2,000,000
Humus Product Company, Limited	London	May 27	40,000
Inspiration Gold Mines, Limited	Toronto	Sept. 26	2,000,000
International Copper, Limited	Toronto	Jan. 22	150,000
Ixion Mines, Limited	Toronto	April 26	100,000
Kamiskotia Mining Company, Limited	Toronto	May 13	2,000,000
Kenyon Copper Mines, Limited	Toronto	Nov. 20	1,250,000
King Midas, Limited	Toronto	Nov. 18	2,000,000
Kingston Smelting Company, Limited	Kingston	Oct. 18	30,000
Kirk Gold Mines Company, Limited	Toronto	June 17	2,000,000
Kittinger Gas Company, Limited	Fort Erie	Jan. 5	40,000
McIvor Gold Mines, Limited	Kirkland Lake	Jan. 5	1,000,000
McRae Porcupine Gold Mines, Limited	Toronto	Feb. 29	2,000,000
Milton Pressed Brick Company, Limited	Toronto	April 19	1,500,000
Mine Centre Copper Company, Limited	Port Arthur	Aug. 14	300,000
Murray Mogridge Mining Company, Limited	Toronto	Nov. 11	2,000,000
National Mines, Limited	Cobalt	Mar. 10	2,000,000
North Victoria Lead Mines, Limited	Toronto	May 5	49,500

MINING COMPANIES INCORPORATED, 1916.—*Continued.*

Name of Company.	Address.	Date of Incorporation.	Capital.
Ogistoh Mining Syndicate, Limited	Toronto	Dec. 12	$40,000
Peerless Artificial Stone, Limited	Toronto	May 6	40,000
Pinene Company, Limited	Cobalt	Nov. 24	150,000
Porcupine-Nighthawk Mines, Limited	Toronto	Sept. 7	1,000,000
Porcupine North Star Gold Mines, Limited	Toronto	Aug. 28	2,500,000
Porcupine V.N.T. Gold Mines, Limited	Toronto	Dec. 5	3,000,000
Port Arthur Copper Company, Limited	Toronto	Dec. 6	2,500,000
Republic Gold Mines, Limited	Toronto	July 10	3,000,000
Richmond Gas & Oil Company, Limited	Chatham	Nov. 22	40,000
Scranton Lehigh Coal Company, Limited	Toronto	Mar. 3	40,000
Sliverado Mining Company, Limited	Cobalt	June 16	1,000,000
Sudbury Nickel, Limited	Sudbury	Feb. 3	100,000
Tash-Orn Mines, Limited	Toronto	Aug. 2	3,000,000
The Acme Oil and Gas Company, Limited	Sarnia	Dec. 21	1,000,000
The Amm Natural Gas and Gasoline Co., Ltd.	Toronto	June 21	2,000,000
The Arnot Construction Company, Limited	Toronto	May 2	40,000
The Bellbirk Porcupine Mines, Limited	Toronto	Oct. 6	2,000,000
The Cashel Copper Mines, Limited	Toronto	Feb. 21	850,000
The Caswell Mining Company, Limited	Toronto	April 15	1,000,000
The Hamilton Lumber & Coal Company, Limited	Hamilton	Dec. 2	150,000
The Indian Lake Lead Mining Company Limited	Toronto	Nov. 20	40,000
The Lakeshore Sand Company, Limited	Toronto	April 8	50,000
The Mattawan River Mining and Milling Company, Limited	Rutherglen	April 29	500,000
The North Thompson Gold Mines, Limited	Toronto	Feb. 19	1,375,000
The Ontario Gypsum Company, Limited	Paris	Dec. 14	750,000
The St. Catharines Machinery Co., Ltd.	St. Catharines.	Dec. 1	40,000
The Sudbury Copper Company, Limited	Toronto	Sept. 15	1,000,000
The Sun Chief Gowganda Silver Mines, Limited	Toronto	April 25	50,000
The Thessalon Copper Company, Limited	Toronto	Dec. 16	2,000,000
Thompson-Krist Mining Company, Limited	Toronto	Nov. 6	2,500,000
Thunder Mining Company, Limited	Toronto	Oct. 7	2,000,000
Twin Falls Lumber Company, Limited	Toronto	Aug. 15	200,000
Washed Sand and Gravel, Limited	Toronto	July 19	60,000
Welland Gas Company, Limited	Welland	Jan. 8	40,000
West Comstock Mining Company, Limited	Toronto	Nov. 9	3,000,000
Wright-Hargreaves Mines, Limited	Toronto	June 16	2,500,000
		Total	$109,079,500

MINING COMPANIES LICENSED IN 1916.

Name of Company.	Head Office for Ontario.	Date of License.	Capital for use in Ontario.
Baldry Yerburgh and Hutchinson, Limited	St. Catharines.	May 31	$561,650
Deloro Smelting & Refining Company, Limited.	Toronto	Aug. 24	1,000,000
Dominion Mines and Quarries, Limited	Toronto	Feb. 25	150,000
E. J. Longyear Company	Sudbury	Mar. 16	30,000
International Metal Company	Tamworth	July 25	20,000
The Anglo-American Talc Corporation, Limited.	Madoc	Jan. 28	50,000
The Confederation Sand and Gravel Company, Limited	St. Catharines.	July 20	200,000
The Sudbury Nickel Refineries, Limited	Ottawa	Aug. 24	5,000,000
		Total	$7,011,650

Mining Revenue

Revenue from mining sources for the fiscal year was $337,051.03, as compared with $343,986.44 in 1915. Following are the particulars:—

Sales of mining land	$36,578 69
Mining leases	16,218 36
Miners' licenses, fees, etc.	66,906 98
Mining royalties	15,083 52
Do. sand and gravel	14,680 41
Mining Tax Act	186,827 12
Provincial Assay Office	744 75
Refunds	11 20
Total	$337,051 03

Sales, Rentals, etc.—Under the Mining Act the price of mining lands in unsurveyed territory is $2.50 per acre, and in surveyed townships $3.00 per acre. The Act requires the purchase price to be paid and patent taken out within nine months after the period expires for performing the last instalment of assessment work. Under the Mines Act of 1897 mining lands might be held either in fee simple or by lease, but since 1906 the law has authorized the issue of mining leases in forest reserves only. As a matter of fact such leases are now confined almost wholly to lands in the Timagami Forest Reserve.

Details of receipts from sales and leases of mining lands are given in the following table. The figures are not exactly the same as those given in the summary, since they include only sales and leases actually completed during the year, while the summary comprises all sums received.

MINING LANDS SOLD AND LEASED.

District.	Sales.			Leases.			Total.		
	No.	Acres.	Amount.	No.	Acres.	Amount.	No.	Acres.	Amount.
			$ c.			$ c.			$ c.
Timiskaming	219	7,990.38	19,943 14	103	3,868.78	3,868 78	322	11,859.16	23,811 92
Thunder Bay	50	2,012.04	4,396 63	....	.....	.....	50	2,012.04	4,396 63
Algoma	13	460.61	1,211 53	....	.....	.....	13	460.61	1,211 53
Sudbury	68	2,878.27	8,410 40	54	1,989.26	1,989 26	122	4,867.53	10,399 66
Nipissing	1	18.15	45 38	....	.....	.....	1	18.15	45 38
Kenora	23	872.66	2,094 20	....	.....	.....	23	872.66	2,094 20
Elsewhere	8	360.00	1,655 00	....	.....	.....	8	360	1,655 00
Total	382	14,592.11	37,756 28	157	5,858.04	5,858 04	539	20,450.15	43,614 32

Miners' Licenses, etc.—The fee for a miner's license is $5, but as all licenses expire on the 31st of March next after the date of issue, a license granted after the 1st of October in any year costs only $3. The fee for renewing a license is $5. For recording a claim the fee is $10. The receipts from miner's licenses and recording fees naturally increase in times when prospecting is active and speculation rife, and decline when the reverse is true. For a permit to prospect for minerals in a forest reserve, the regulations prescribe a charge of $10.

Royalties.—This item, which applied to a few only of the silver mines of Cobalt, has now nearly disappeared, and will no doubt shortly disappear altogether. The mines on which it has levied have greatly diminished in production, and the rate of royalty has been reduced, thus enabling them to operate so long as there is any profit, or hope of profit. The chief royalty-paying mines are the O'Brien, Crown Reserve, Hudson Bay and Chambers-Ferland. The receipts from royalty in 1916 were from one mine only, the Crown Reserve. The total paid by this mine up to the end of the last fiscal year was $809,029.10, and the entire amount by all the royalty-paying mines was $1,903,993.96.

Rents and royalties from sand and gravel leases and licenses yielded in 1915-16 the sum of $14,680.41.

Mining Tax Act.—Three sources of revenue are provided by this Act, as follows: (1) Acreage tax, consisting of 2 cents per acre levied on all mining lands situate in unorganized territory, which would otherwise, for the most part, entirely escape taxation; (2) an impost of 2 cents per thousand cubic feet on natural gas, with a rebate of 90 per cent. if the gas is used in Canada: the tax being in practice one of two-tenths of a cent per thousand cubic feet, since no gas is now piped out of the Province, and (3) a charge of 3 per cent. on the annual net profits of a mine in excess of $10,000.

These sources in 1916 produced the following amounts:—

Acreage Tax	$12,637 38
Gas Tax	33,630 14
Profit Tax	140,559 60
Total	$186,827 12

The total in 1914-15 was $177,101.53.

In view of the changes made by the Legislature in the Mining Tax Act at the session of 1917, it may be well to give the list of mines which have paid this tax, and the sums they have paid respectively. These will be found below. The tax began in 1907, and so has completed a full decade in its original form. The principal changes consist in (1) an increase in the tax from 3 to 5 per cent. where the net profits exceed one million dollars, (2) an increase from 3 to 5 per cent. on the profits from nickel-copper mines, and reckoning the profits as being the difference between the cost of production and the selling price of the refined products, the tax also being a graduated one over and above five million dollars, (3) increasing the proportion of the tax payable to the municipalities in which the mines are situated, from one-third to one-half. The acreage tax was also increased from 2 to 5 cents per acre.*

Following is a list of the mines which have paid the profit tax, showing the amount paid by each for the last fiscal year, and the total for the full period of the tax to 31st October, 1916.

* Mining Tax Act, 1917 (7 Geo. V., chapter 7). For a fuller discussion of Mining Taxation in Ontario, see Report of Royal Ontario Nickel Commission, 1917, pp. 506-528.

MINES WHICH HAVE PAID PROFIT TAXES.

Mine.	Paid in 1916.	Total 1907–16.
Silver Mines.	$ c.	$ c.
Beaver	5,783 42	15,569 27
Buffalo	2,010 86	38,351 56
Casey-Cobalt	695 13	5,531 54
Coniagas	7,347 89	122,173 85
Cobalt Silver Queen	.....	4,657 15
Cobalt Comet	2,988 37	4,930 39
Cobalt Lake (Mining Corporation of Canada)	.....	12,750 60
Crown Reserve	1,885 48	1,885 48
Drummond	.....	11,788 84
Foster	.....	577 87
Kerr Lake	11,397 30	131,673 60
La Rose	4,042 21	139,562 13
McKinley-Darragh-Savage	1,529 88	78,988 73
Miller-Lake O'Brien	1,992 26	11,036 22
Nipissing	22,519 27	252,426 83
Penn-Canadian	7 90	391 72
Timiskaming	7,281 58	41,333 85
Trethewey	.....	15,153 18
Seneca-Superior	9,014 48	23,443 70
Standard	.....	1,447 00
Watts	.....	258 69
Wettlaufer-Lorrain	.....	19,054 45
Total	78,496 03	932,986 65
Gold Mines.		
McIntyre-Porcupine	3,087 62	4,631 26
Dome	6,334 34	15,402 40
Tough-Oakes	6,690 80	6,690 80
Porcupine Crown	6,359 84	14,343 62
Acme	7,843 44	7,843 44
Hollinger	31,034 66	93,112 04
Porcupine Vipond	216 21	216 21
Total	61,566 91	142,239 77
Nickel-Copper Mines.		
Alexo	496 66	806 59
Canadian Copper Company	.....	245,000 00
Mond Nickel Company	.....	18,226 94
Total	496 66	264,033 53
Miscellaneous.		
Lake Superior Corporation (Iron)	.....	1,683 51
Loughborough Mining Company (Mica)	.....	216 21
Total	.....	1,899 72
Summary.		
Silver Mines	78,496 03	932,986 65
Gold Mines	61,566 91	142,239 77
Nickel-Copper Mines	496 66	264,033 53
Miscellaneous Mines	.....	1,899 72
Total	140,559 60	1,341,159 67

It should be pointed out that the royalty-paying mines are exempted from the 3 per cent. profit tax, and are therefore not included in the foregoing list, except in cases where the royalty was removed on the mine nearing exhaustion, when the tax took effect.

The following notes on the operation of the Mining Tax Act for 1916 are furnished by Mr. Mickle. Mine Assessor, who from the passing of the Act has had charge of collecting the revenue:—

The Mining Tax Act, which levies three different taxes, yielded the amounts mentioned below for the year 1916. The sums stated are those payable for the year 1916, and collected in the case of the Profit and Natural Gas Tax, although some of the taxes would be paid after the close of the fiscal year for the Province on the 31st October, and consequently will not agree with the statements given in the Public accounts.

1. Profit Tax (not including amounts payable by the two principal nickel companies)	$140,867 55
2. Natural Gas Tax	30,336 17
3. Acreage Tax (April 15th, 1916—April 15th, 1917)	12,080 91
Total	$183,284 63

With regard to the Profit Tax, this has been at the rate of three per cent., with certain deductions for taxes paid municipalities. Substantial alterations having been made by the Legislature, particularly with regard to nickel mines, and these amendments applied to the year 1916, taxes have not been collected from companies operating nickel mines for 1916 up to the present. On the basis hitherto in force the amount of Profit Tax would have been about $90,000 greater than given above. The levy for 1916 is slightly greater than for 1915, even without the tax from the nickel companies.

With reference to the operations of the Profit Tax, as material alterations were made in the Act and comparisons of results in the future will be of little value, it seems opportune to review briefly the results obtained during the ten years it has been in force, from 1907 to 1916. By calendar years the returns were as follows:

1907	$66,741 68
1908	65,922 48
1909	78,327 58
1910	111,546 17
1911	131,577 75
1912	200,275 25
1913	206,212 77
1914	201,940 20
1915	138,056 20
1916	*140,867 55
Total	$1,341,467 63

* Not including tax from nickel companies.

Revenue from this tax has been obtained almost entirely from three classes of mines, viz., silver, nickel-copper, and gold mines. The profit on production of all other kinds of ores has yielded only an insignificant portion. The total taxes for the ten years in question have been as follows:—

Silver mines	$933,746 59
Nickel-copper mines	264,033 53
Gold mines	140,696 13
Miscellaneous mines	2,991 38
Total	$1,341,467 63

The tax from silver mines reached its maximum of $156,000 approximately in 1912; since then it has declined to about one-half that amount. For the future, as the proportion of the Profit Tax which may be deducted from the Provincial tax has been substantially increased, viz., from one-third to one-half in most cases, there will be a consequent equal

reduction of the amount accruing to the Province of about 25 per cent. This will apply also to gold mines.

With regard to the nickel-copper mines, the amount given is for nine years, not ten, the last year being very much the best. For the future the tax, both with respect to rate and basis of computation, is totally different. Moreover, for the greater part of the taxes payable under the new legislation, the amount which might be deducted from the Provincial tax on account of municipal expenditure, instead of being one-third, will be probably one-twentieth.

Coming to the gold mines, these first contributed to the Profit Tax in 1913. The amount paid yearly has increased greatly, and in 1916 was about $62,000.

The tax on natural gas, which is a fixed amount equivalent to $2.00 per million cubic feet, is gradually increasing at the rate of about 10 per cent. per year, mainly due to the increased production from one field. Unless new discoveries are made, the tax must decline in the course of the next few years.

Respecting the acreage tax, a substantial change was also made in this by the Legislature, the rate being increased from two to five cents per acre and the tax made applicable to lands in organized territory in which the mineral rights have been severed from the surface rights. Hitherto such mineral rights were only taxable in unorganized territory, that is, with no municipal organization. The number of acres affected by this change cannot be estimated yet. Information is being compiled by various Local Masters of Titles on this point.

Provincial Assay Office

Following is a report on the Provincial Assay Office for 1916, by W. K. McNeill, B.Sc., Provincial Assayer. The office is operated in connection with the Bureau of Mines.

The work of the Provincial Assay Office, No. 5 Queen's Park, Toronto, is as follows:—

(*a*) Examination and assaying of samples from mining engineers, prospectors, geologists, and the public generally.

(*b*) Work for the Ontario Bureau of Mines, consisting of analyses of rocks, assaying of different ores and identification of minerals for the geologists employed by the Bureau.

(*c*) Testing samples submitted by the public for radium. This work is done free of charge.

(*d*) Sampling car lots of cobalt-silver ore, upon which the Government collects a royalty. This necessitates having a sampler at Deloro for a large part of the time.

(*e*) Assaying and valuating of these car lots.

(*f*) Analyzing and valuating shipments of cobalt and nickel compounds shipped by various smelters and on which a bounty is paid.

The work may be further classified as follows:—

Gold.—450 samples were assayed for gold and reports issued.

Silver.—72 samples of silver were submitted, including car lots of cobalt-silver ore, upon which the Government collects a royalty.

Platinum.—9 samples were submitted for assay for platinum.

Iron.—46 samples of iron ore were analyzed for iron, also for sulphur and phosphorus.

Copper.—61 samples. During the year a greater interest was manifested in this metal, as shown by assays and inquiries received for information.

Nickel.—64 samples. In addition, analyses were made in experiments conducted for the Royal Ontario Nickel Commission.

Rock samples.—17 rock samples were submitted by the geologists of the Bureau of Mines for complete analyses.

General.—278 other samples were received, including samples for cobalt, molybdenum, zinc, lead, etc.

In addition to the work designated above, shipments of cobalt and nickel oxides from the various smelters were analyzed and valuated.

This office also conducted experiments and analyzed samples for the Ontario Nickel Commission.

The Provincial Assayer had charge of the Mineral Exhibit of the Ontario Bureau of Mines at the Canadian National Exhibition, and was assisted by Professor Ledoux of Toronto University. They desire to thank the mine owners and managers who kindly loaned samples, and in other ways contributed to the success of the Exhibition.

The work was carried out with the following assistance: T. E. Rothwell, B.Sc., Assistant Provincial Assayer; E. W. Todd, B.Sc., who was employed for two months, and A. Leat for six months.

In assaying for the public, samples will be dealt with in the order of their arrival. In every instance specimens and samples should be accompanied by statement specifying the precise locality whence they were taken.

Crushed samples representing large quantities or samples less than five pounds weight may be sent by mail as third-class matter. Write name and address plainly on each parcel. Send instructions, with money in payment of fees in a separate letter. Samples may be sent by express, charges prepaid.

Sample bags addressed to this Laboratory for sending ore pulp by mail may be obtained free on application; also canvas bags for shipping.

Money in payment of fees, sent in by registered letter, post-office order, postal note, or express order, and made payable to the Provincial Assayer, must invariably accompany sample to insure prompt return of certificate, as no examination is commenced until the regulation fee is paid.

Samples should be addressed as follows: "To Provincial Assay Office, 5 Queen's Park, Toronto, Ont."

TARIFF OF FEES FOR ANALYSES AND ASSAYS.

1. *Assays:*

Gold	$1 00
Silver	1 00
Gold and Silver in one sample	1 50
Platinum	4 00
Gold and Platinum in one sample	5 00
Gold by amalgamation	2 00

For the amalgamation assay for gold at least five pounds of ore must be sent.

2. *Iron Ores:*

Iron (metallic)	$1 00
Silica	1 50
Iron and insoluble residue	1 50
Ferrous Oxide	2 00
Phosphorus	2 00
Sulphur	2 00
Iron, Sulphur, Phosphorus and insoluble	3 00
Manganese	2 00
Titanium	2 00
Complete analysis:—Ferrous Oxide, Ferric Oxide, total Metallic Iron, Silica, Alumina, Lime, Magnesia, Manganese, Phosphorus, Sulphur and Titanium	15 00

3. *Limestones, Dolomites, Marls, Clays, Shales:*

Determination of:

Insolubles	$1 00
Silica	1 50
Ferric Iron	2 00
Ferrous Iron	2 00
Alumina	2 00
Lime	1 50
Magnesia	1 50
Alkalies (combined)	5 00
Potash	4 00
Water (combined)	1 00
Moisture	0 50
Organic Matter	1 00
Carbon Dioxide	1 50
Sulphur	2 00
Phosphorus Anhydride	2 00

4. *Examination of Clay, Shale, or Cement Rock for Cement Manufacture:*

Determination of:

Silica, Iron Oxide, Alumina, Lime, Magnesia, Sulphuric Anhydride and Volatile Matter	$10 00

5. *Coal, Coke, Peat, etc.:*

Determination of:

Moisture	$0 50
Volatile Combustible	1 00
Fixed Carbon	1 00
Ash	1 00
Sulphur	2 00
Phosphorus	2 00
Calorific Value	5 00
Ultimate Analysis	Price on Application

6. *Mineral Waters* ..... Price on Application

7. *Ores and Minerals:*

Determination of:

Alumina	$2 00
Antimony	3 00
Arsenic	3 00
Bismuth	3 00
Cadmium	3 00
Chromium	3 00
Cobalt	3 00
Copper	2 00
Gold	1 00
Ferrous Oxide	2 00
Ferric Oxide	2 00
Lead	2 00
Lime	1 50
Magnesia	1 50
Molybdenum	2 00
Manganese	2 00
Nickel	3 00
Silica	1 50
Water	1 00
Zinc	2 00

8. *Rocks, Complete Analysis* ..... Prices on Application

9. *Slags, Sand, etc.* ..... Prices on Application

10. *Identification of Minerals and Rocks not Requiring Chemical Analysis*.... Free

Any analytical work not specified above will be undertaken on application to the Provincial Assayer.

The pulp of each sample is retained for future reference.

MINING ACCIDENTS IN 1916

Chief Inspector of Mines, T. F. Sutherland, Toronto; Inspectors, E. A. Collins, Kingston; James Bartlett, Cobalt; J. H. Stovel, Sudbury

During the year 1916 at the mines, metallurgical works, quarries, clay and gravel pits regulated by the Mining Act of Ontario there were 45 fatal accidents causing the death of 51 men, as compared with 22 deaths in 1915 and 58 in 1914. Of these, 24 accidents resulting in 30 deaths occurred underground. Seven men were killed above ground at the mines, eight men were killed at the metallurgical works and six men at the quarries.

Eighteen companies had fatal accidents during the year.

Particulars of the fatal accidents during 1916 were given in Bulletin No. 30 of the Ontario Bureau of Mines.

The report of the Workmen's Compensation Board for 1916 shows that 1,349 claims for compensation in Class 5, Schedule 1[1] were handled by the Board during the year, of which 87 claims were for permanent disability.

Table 13 of the report shows that 24,869 days were lost through accidents; that the average of age of the injured was 31.10 years and the average weekly wages $18.21.

Table 15 gives the nature of the injuries. Of 1,114 temporary disability cases finally disposed of, the causes were classified as follows:

Bruises, contusions and abrasions	314
Cuts and lacerations	283
Fractures	99
Crushes	109
Sprains, strains, etc.	101
Burns and scalds	108
Punctures	28
Eye injuries	47
Hernias	5
Internal injuries	5
Dislocations	10
All other injuries	2
Industrial diseases	3
Total	1,114

The fatal accidents in connection with the mineral industry for the last three years were as follows:

Table of Fatalities

	1914.	1915.	1916.
Mines, underground	29	17	30
Mines, surface	9	4	7
Metallurgical works	5	1	8
Quarries	15	0	6
Totals	58	22	51

[1] Class 5.—Mining; reduction of ores and smelting; preparation of metals or minerals; boring and drilling including sinking of artesian wells (except when done by an employer coming under Class 14); manufacture of calcium carbide, carborundum or alundum, abrasives or abrasive articles other than stone.

The fatalities at the mines were divided amongst the several districts as follows:

	1914	1915.	1916.
Gold mines of Porcupine and Kirkland Lake..	12	3	14
Silver mines of Cobalt and adjacent districts.	11	6	8
Nickel-copper mines of Sudbury	9	11	13
Iron mines of Michipicoten	4	0	2
Western Ontario	1	0	0
Eastern Ontario	1	1	0
Totals	38	21	37

By months the fatalities occurred as follows:

	1914	1915.	1916.
January	6	0	7
February	5	3	4
March	7	0	1
April	7	4	2
May	5	0	7
June	8	1	5
July	4	2	1
August	5	3	2
September	2	3	3
October	3	3	1
November	4	1	10
December	2	2	8
Totals	58	22	51

Analysis of Fatalities at Mines

Cause.	1914	1915	1916
	Per cent.	Per cent.	Per cent.
Falls of ground	7.9	4.8	24.3
Shaft accidents	26.3	23.8	27.0
Explosives	26.3	33.3	21.6
Miscellaneous underground	15.8	23.8	8.1
Surface	23.7	14.3	18.9

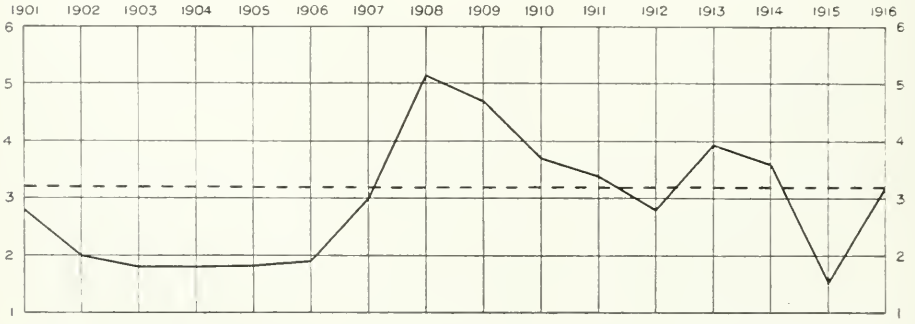


Diagram showing Mining Fatalities per thousand men employed between the years 1901-1916. The dotted line represents the average for the period.

Table of Fatal Accidents in Mines, Metallurgical Works and Quarries, 1901 to 1916

—	Persons killed at metallurgical works and mines.	Persons employed at metallurgical works and producing mines.	Persons employed at non-producing mines (estimated).	Total persons employed.	Fatal accidents per 1,000 employed.
1901.....	13	4,135	550	4,685	2.77
1902.....	10	4,426	450	4,876	2.05
1903.....	7	3,499	400	3,899	1.79
1904.....	7	3,475	400	3,875	1.80
1905.....	9	4,415	500	4,915	1.83
1906.....	11	5,017	750	5,767	1.90
1907.....	22	6,305	1,140	7,445	2.93
1908.....	47	7,435	1,750	9,185	5.11
1909.....	49	8,505	2,000	10,505	4.66
1910.....	48	10,862	2,000	12,862	3.73
1911.....	49	12,543	2,000	14,543	3.37
1912.....	43	13,108	2,000	15,108	2.84
1913.....	64	14,293	2,000	16,293	3.93
1914.....	58	14,361	1,500	15,861	3.60
1915.....	22	13,114	1,500	14,614	1.51
1916.....	51	14,624	2,000	16,624	3.07
Totals ..	510	140,117	20,940	161,057	3.16

The occupation and nationality of the men killed are set out in the following table:

Occupation.	English Speaking.	Italian.	Austrian.	Russian.	Finn.	German.	Spaniard	Swede	Total.
Labourer.....	6	3	2	2	.....	.....	.....	1	14
Machine runner..	3	1	2	1	2	1	.....	.....	10
Trammer.....	3	.....	1	1	.....	.....	.....	.....	5
Machine helper ..	1	.....	1	.....	.....	1	.....	.....	3
Chute blaster	1	.....	.....	2	.....	.....	.....	.....	3
Foreman	3	.....	.....	.....	.....	.....	.....	.....	3
Blockholer	.....	.....	1	.....	1	.....	1	.....	3
Millman.....	1	1	.....	.....	.....	.....	.....	.....	2
Scaler.....	.....	.....	.....	1	1	.....	.....	.....	2
Timberman	1	.....	.....	.....	.....	.....	.....	.....	1
Hoistman	1	.....	.....	.....	.....	.....	.....	.....	1
Helper	.....	1	.....	.....	.....	.....	.....	.....	1
Electrician.....	1	.....	.....	.....	.....	.....	.....	.....	1
Crusherman.....	.....	1	.....	.....	.....	.....	.....	.....	1
Teamster.....	1	.....	.....	.....	.....	.....	.....	.....	1
Totals.....	22	7	7	7	4	2	1	1	51

The ages of the men killed were as follows:

17–20	21–25	26–30	31–35	36–40	41–45	46–50	51–55	56–60	61–65	Total.
3	11	6	17	4	6	1	1	1	1	51

Table of Fatal Accidents in

No.	Date. 1916.	Name of Mine.	Name of Owner.	Name of Deceased.	Occupation of Deceased.
1	Nov. 4	Adanac	Adanac Silver Mines ..	N. Lamoureux ...	Machine helper .
	" 4	do	do do ..	E. Sturgeon	Machine runner.
2	Jan. 3	Magpie	Algoma Steel Corpn. ..	I. Gaetano	Millman. .....
3	Dec. 29	do	do do .	I. Piazza	Machine runner.
4	Nov. 22	Cyril Lake	Calumet and Montana Consolidated	F. Contymyr	Machine runner.
	"	do	do do ..	T. Yorke	Machine helper .
5	Jan. 16	Creighton	Canadian Copper Co. ..	S. Docenka	Chute blaster ..
6	Feb. 22	do	do do ..	S. Oslapowicz ...	Trammer .....
7	Mch. 31	do	do do ..	R. McDonald	Machine runner.
8	April 2	do	do do ..	M. Aab	Sealer .....
9	May 4	do	do do ..	C. O'Connor	Foreman .....
	"	do	do do ..	S. Minta	Machine runner.
	"	do	do do ..	J. Kusch	Machine helper .
10	" 12	Crean Hill	do do ..	G. Korol	Machine runner.
11	Aug. 26	do	do do ..	W. Powlowski ...	Blockholer .....
12	Nov. 3	Creighton	do do ..	J. Ballister	Blockholer .....
13	Dec. 18	do	do do ..	A. Auver	Sealer .....
14	Dec. 16	Mill	Cobalt Reduction Co. ..	J. Bellerby	Millman. .....
15	Jan. 4	Dome	Dome Mines Co.	E. Wallace	Timberman ....
16	Jan. 21	do	do do ..	J. H. Smeltzer ...	Foreman .....
	" 21	do	do do ..	M. Cahill	Foreman .....
	" 21	do	do do ..	B. Deshales	Machine runner.
17	May 15	do	do do ..	S. Maki	Blockholer .....
18	July 12	do	do do ..	F. Chapman	Hoistman ....
19	June 9	Foster	Glen Lake Cobalt Mines, Ltd.	S. Labelle	Trammer .....
20	June 20	Hollinger	Hollinger Consolidated Gold Mines	J. Ormelchock ...	Machine runner.
21	Sept. 6	do	do do ..	H. Rheault	Laborer .....
22	Nov. 4	do	do do ..	M. Therien	Trammer .....
23	" 12	do	do do ..	F. Kusi	Machine runner.
24	Dec. 27	do	do do ..	G. Mudato	Chute blaster ..
25	May 8	La Rose	La Rose Mines	A. Belanger	Laborer .....
	Nov. 7	.....	McKinnon & Ogilvie ..	J. Cullan	Laborer .....
26	Dec. 6	Townsite	Mining Corporation of Canada	W. Crubak	Trammer .....
27	Feb. 3	Bruce	Mond Nickel Co.	G. Simmonds	Trammer .....
28	Aug. 12	Levack	do do ..	A. Twerdochlibe .	Laborer .....
29	April 25	Crown	Porcupine Crown Mining Co.	D. Chisholm	Blaster .....
30	Feb. 26	Vipond	Porcupine Vipond Mines	A. Pehlaga	Machine runner.

or about the Mines, 1916

Nationality of Deceased.	Age.	Married or single.	Below ground.	Above ground.	Cause of Accident.
English-speaking	26	S	1	....	Struck by crosshead while riding bucket.
English-speaking	30	M	1	....	
Italian	27	S	.....	1	Fell while oiling in coal grinding plant.
Italian	40	.....	1	.....	Struck by fall of ore.
Austrian	43	M	1	....	Premature explosion while firing round.
Austrian	38	M	1	....	
Russian	32	M	1	.....	Premature explosion while sand blasting.
Austrian	32	M	1	.....	Crushed between ore train and side of drift.
English-speaking	25	S	1	.....	Caught by station timber and swept off skip.
Russian	25	S	1	.....	Slipped on ice and fell while inspecting incline shaft.
English-speaking	34	S	1	....	Fall of ground in stope.
German	24	S	1	....	
German	21	S	1	....	
Austrian	34	M	1	.....	Caught in stope when round fired.
Austrian	22	M	1	.....	Drilled into explosive while blockholing.
Spaniard	28	S	1	.....	Struck by fall of ore while blockholing.
Finn	24	S	1	.....	Caught by fall of ground while scaling.
English-speaking	60	M	.....	1	Electrocuted in mill, touched terminal of 3-pole switch.
English-speaking	32	S	1	.....	Slipped and fell while timbering in No. 3 shaft.
English-speaking	32	M	1	....	Raise to bottom of shaft blocked. Jam broke while men were in shaft standing over raise attempting to start it.
English-speaking	34	S	1	....	
English-speaking	22	S	1	....	
Finn	32	S	1	.....	Struck by falling bucket in shaft.
English-speaking	35	M	.....	1	Caught between spur wheel and pinion of indicator gear of hoist.
English-speaking	42	M	1	.....	Struck by slab of rock from footwall of stope.
Russian	32	M	1	.....	Struck by rock which fell from back of drift.
English-speaking	25	S	.....	1	Fell from scaffold on headframe at central shaft.
English-speaking	18	S	1	.....	Fell into stope.
Finn	23	S	1	.....	Returned too soon after blasting and caught by second explosion.
Russian	41	M	1	.....	Premature explosion while sand blasting.
English-speaking	25	S	.....	1	Crushed between two cars on railway siding.
English-speaking	65	M	.....	1	Struck by falling tree.
Russian	52	M	1	.....	Caught by run of ore in stope.
English-speaking	45	M	1	.....	Struck by skip while cleaning out sump.
Austrian	47	M	.....	1	Struck by bar while barring chute in rock house.
English-speaking	33	S	1	.....	Gassed in raise while refiring holes.
Finn	37	S	1	.....	Struck by fall of ground while drilling.

Table of Fatal Accidents at

	Date, 1916.	Name of Works.	Name of Owner.	Name of Deceased.	Occupation of Deceased.
31	Jan. 27	Roast yards	Canadian Copper Co. ..	E. Sandholm.....	Laborer .....
32	Feb. 16	Smelter	do do ..	A. De Bartoli ...	Laborer .....
33	Sept. 21	do	do do ..	A. Destifano	Helper .....
34	June 1	do	Mond Nickel Co.	W. J. Perrin.....	Electrician ....
35	Oct. 1	do	do do ..	C. Mazuck	Laborer .....
36	Nov. 3	Roast yards	do do ..	N. Kozoriz	Laborer .....
37	Dec. 2	Smelter	do do ..	E. Grenier	Laborer .....
38	Dec. 13	do	do do ..	F. Resera	Crusherman ...

Table of Fatal Accidents

39	June 15	Washing plant ..	Armstrong Supply Co...	P. English	Teamster .....
40	Sept. 14	Crushing plant ..	Canada Crushed Stone Corporation	S. Farrow	Laborer .....
41	Nov. 22	do ..	do do ..	T. Fillipe	Laborer .....
42	June 26	Screening plant ..	Roesand Company	G. Berry	Laborer .....
43	May 11	Quarry	Standard Crushed Stone Co.	A. Ceccarelli	Laborer .....
44	Dec. 27	Sand pit	Hollinger Consolidated Gold Mines	F. S. Cotmeix ...	Laborer .....

Metallurgical Works, 1916

Nationality of Deceased.	Age.	Married or single.	Cause of Accident.
Swede	22	S	Knocked off flat car and run over.
Italian	35	M	Fell into ore bin.
Italian	33	M	Received shock while repairing crane and fell fourteen feet. Died October 14th.
Italian	28	S	Electrocuted in transformer house.
Russian	29	M	Knocked off car and run over.
Austrian	42	M	Struck by flying material from blast.
English-speaking	20	S	Crushed by converter-room crane.
Italian	35	M	Killed while applying belt dressing.

at Quarries, 1916

English-speaking	40	S	Suffocated in sand bin.
English-speaking	35	M	Adjusting belt on moving pulley.
Italian	19	S	Killed while applying belt dressing.
English-speaking	32	S	Adjusting belt on moving pulley.
Italian	43	M	Run over by car.
Russian	[illegible]	M	Killed in sand pit.

MINES OF ONTARIO

Chief Inspector of Mines, T. F. Sutherland, Toronto; Inspectors, E. A. Collins, Kingston; J. H. Stovel, Sudbury; Jas. Bartlett, Cobalt

I.—NORTH-WESTERN ONTARIO

Iron Pyrites

Minnitaki Lake.—Jas. Whalen, of Port Arthur, is sinking a hundred-foot shaft on a pyrites deposit located near the shore of Minnitaki Lake, south-west of Graham station on the Canadian Government railway. Previous diamond drilling on this property had shown a considerable body of high-grade ore.

Northern Pyrites Mine.—The Northern Pyrites Company, at present controlled by the General Chemical Company of New York, operated their mine, at Northpines, Ontario, continuously throughout the year. During the season of navigation about 70,000 tons were shipped to the various plants of the General Chemical Company in the United States. Extensive alterations to the power plants, etc., carried on during the summer months, curtailed the output.

The new power house, of steel frame and hollow tile construction, containing five boilers, two compressors, mill engine, electric generators, etc., has now been completed. The additional air capacity, due to the installation of a second air compressor, will permit of larger shipments being made in the future. Alterations to concentrating mill during the coming winter will enable some lower grade ore to be handled.

In November, Mr. H. V. Smythe, who had been superintendent of this property for the past six years, was appointed general superintendent of mines, with jurisdiction over all the General Chemical Company's and the Nichols Chemical Company's mining interests in Canada. His office is with the Nichols Chemical Company, Limited, at Montreal. G. B. Holderer succeeded Mr. Smythe as superintendent of the Northern Pyrites Company. About 125 men are employed continuously at the property.

Mokomon.—The above company are diamond-drilling a pyrites prospect at Mokomon in Conmee township about 23 miles north of Fort William. Dr. Warren S. Smith, of the General Chemical Company's geological staff, is personally directing this work.

Copper

Port Arthur Copper Company.—Early in June, 1916, a copper deposit was discovered about four miles west of Mine Centre and one-half mile south of the main line of the Canadian Northern railway. This property was worked in a small way, until the end of November, by J. F. Hewitson, of Port Arthur, and J. A. Johnson, of Mine Centre. A force of about twelve men were employed, and eight

carloads were shipped to Trail, B.C. The workings consisted of a small open pit. Two small boilers, a hoist and a small compressor had been placed on the property. At end of November, F. M. Connell, of Toronto, acquired control, and has organized the Port Arthur Copper Company.

Gold

St. Anthony Mine.—Until September, 1916, this property was being developed, under option to purchase, by a company known as The St. Anthony Development Company, which was controlled by the Kerr Lake Mining Company and the Wettlauffer-Lorrain Company, both of 61 Broadway, New York. One hundred feet of sinking and several hundred feet of drifting and cross-cutting were done by this company. This work blocked out a considerable tonnage of good ore. M. C. H. Little had charge of the work. The option was allowed to expire in September.

In September the property was taken over by a company organized for that purpose and known as the Thunder Mining Company, Limited. This company has a capitalization of one million shares of $1.00 each and $140,000 first mortgage bonds. The officers are: D. M. Steindler, president; E. H. Westlake, vice-president, and Eugene L. Steindler, sec.-treas. H. H. Lavery, St. Anthony Mine P.O., *via* Fort William, Ont., is superintendent. Development only will be undertaken in the year and a half before the final payment is due. From 50 to 70 men are employed. The mine is situated on Sturgeon lake, and is reached from Bucke station on the Canadian Government railway.

Tash Orn.—The Tash Orn Mines, Limited, is developing the Wells gold claim (T.B. 2892) about a mile southeast of Tashota station on the National Transcontinental railway.

A shaft has been sunk 115 feet and 350 feet of drifting and cross-cutting done on the 100-foot level. Two boilers have been installed; also a small hoist and an air compressor.

The company is incorporated in Ontario for $3,000,000. Mr. Castleberg is president, and John L. Orn treasurer and managing director.

II.—SUDBURY, NORTH SHORE AND MICHIPICOTEN

Iron Ore

Helen.—Operations at this property of the Algoma Steel Corporation consisted of drawing off the caved hematite ore. This ore was mostly shipped to the Magpie mine, where it was roasted to reduce the sulphur content. In addition some pyrites was obtained and shipped to the acid plant at Sault Ste. Marie. During the year diamond drilling was continued on the siderite deposit which lies to one side of, as well as underneath, the hematite deposit at the Helen. A very large tonnage of siderite has been proven by the drilling, and plans for the development of this are under way.

G. R. McLaren, Helen Mine, Ont., is superintendent. About 110 men were employed.

Magpie.—The Magpie mine, of the Algoma Steel Corporation, operated continuously during the year. The roasting plant was kept going to its full capacity, between 900 and 1,000 tons daily, of raw ore. Considerable ore, running high in sulphur, from the Helen mine was dumped down an old stope, hoisted and mixed with Magpie ore and then roasted. Most of the ore hoisted came from above the second level, but mining was carried on in one stope above the third level. The balance of the third level was being developed. The shaft was sunk to below the fourth level, the fourth level station cut and a cross-cut run through the ore. Development on this level will be pushed as soon as the timbering in the shaft is completed. It is worth noting that the method of mining used at the Magpie mine appears to be one of the safest as well as one of the cheapest in use in Ontario.

A. Hasselbring, general superintendent of mines for the Algoma Steel Corporation, is in charge at the Magpie. About 250 men were employed at the property.

Nickel and Copper

The Canadian Copper Company.—The Canadian Copper Company operated, during 1916, the following mines: Creighton, Crean Hill, No. "2," Vermilion, and the Dill quartz quarry. The first four in the above list shipped 1,328,076 tons to the Copper Cliff smelter. This is almost 400,000 tons in excess of the shipments in 1915, the previous record year.

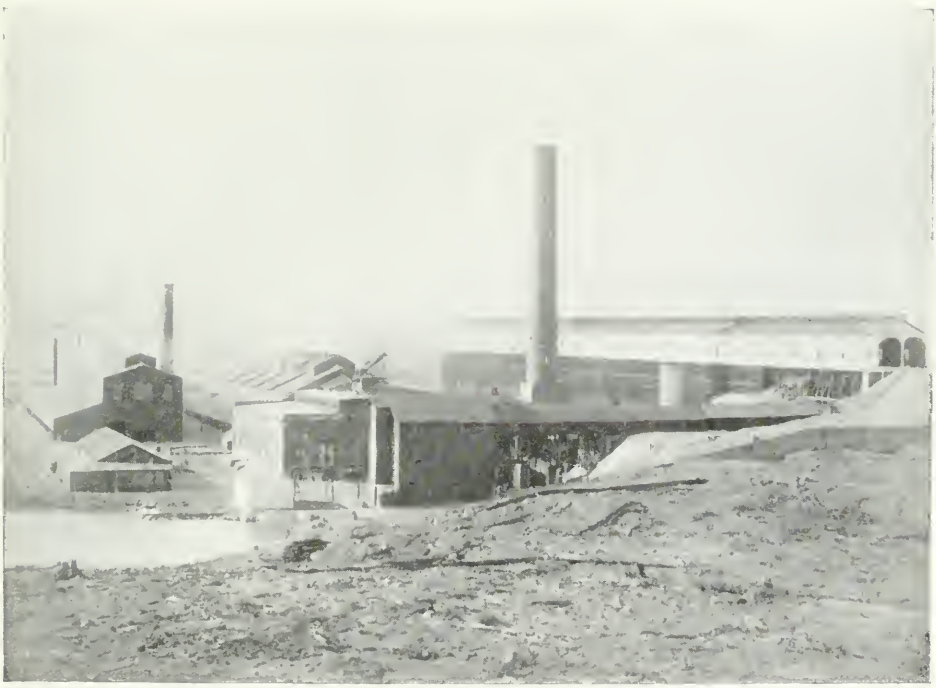
The officials of the company are: President, A. D. Miles; general superintendent, J. L. Agnew; superintendent of mines, J. C. Nicholls; assistant superintendent of mines, J. P. Hussey; chief engineer, E. H. Jones; chief metallurgist, J. W. Rawlins; safety engineer, E. T. Corkill.

Copper Cliff Smelter.—The Copper Cliff smelter was run to capacity, and, like the mines of the company, handled a much larger tonnage than in any previous year. No changes of importance were made. Plans are now under way for installation of additional furnaces of larger capacity than those in service.

All told, about 1,000 men are employed at the smelter. W. Kent is smelter superintendent.

Roast Yards.—The old roast yards at Copper Cliff were abandoned late in the spring of 1916. The new yards are situated at O'Donnell, mileage 17 on the Algoma Eastern railway. There are three parallel tracks, 6,000 feet long, spaced about eighty feet apart. The roast beds are made up in units of a hundred feet in length in the space between the tracks. Two feet of cordwood is placed in the bottom of each bed, then about eight feet of coarse ore is piled on this. A thin coating of ore fines is spread on the top of the beds. It takes about three months to complete the roasting of a bed. The ore is moved from flat cars, on which it is shipped, to the roast piles by contract. Some ore is shovelled directly on to the bed, but the major portion is handled by means of wheelbarrows. When inspected in August between sixty and seventy thousand tons were being handled monthly. The roast beds have a total capacity of 350,000 tons.

General view of Copper Cliff smelting plant.



General view of blast furnace and converter departments, Copper Cliff.

Between the roast beds and the Algoma Eastern railway a large sorting and storage yard is provided, the weighing scales being at this point.

About 150 men are employed.

Vermilion.—The Vermilion mine was operated throughout the year. It was shut down at end of January, 1917, as, owing to shortage of labour, it was thought advisable to use the labour in the larger producing mines. During this period 2,230 tons of ore were shipped to the smelter at Copper Cliff. The ore stoped was obtained in the upper 100 feet of the mine. No sinking was done.

Charles Collins, of Crean Hill, is superintendent. From 10 to 15 men were employed.

Dill Quartz Quarry.—The Canadian Copper Company operated their quartz quarry in Dill township from the first of April to the end of November. 51,143 tons of quartz were shipped to the Copper Cliff smelter.

H. Whitehead, Quartz, Ont., is superintendent. Forty-five men were employed.

Number 2.—Number 2 mine was operated continuously during 1916, but was shut down at end of January, 1917. In that period 66,550 tons of ore were shipped. During the year the sixth and the ninth level floors were taken out. This ore was all drawn out at the tenth level. The mine, when closed down, had a continuous open pit from surface to the tenth level, and the mine superintendent, W. J. Hambly, claimed a 100 per cent. recovery of the ore above that point. All pumps and machinery have been removed from the mine.

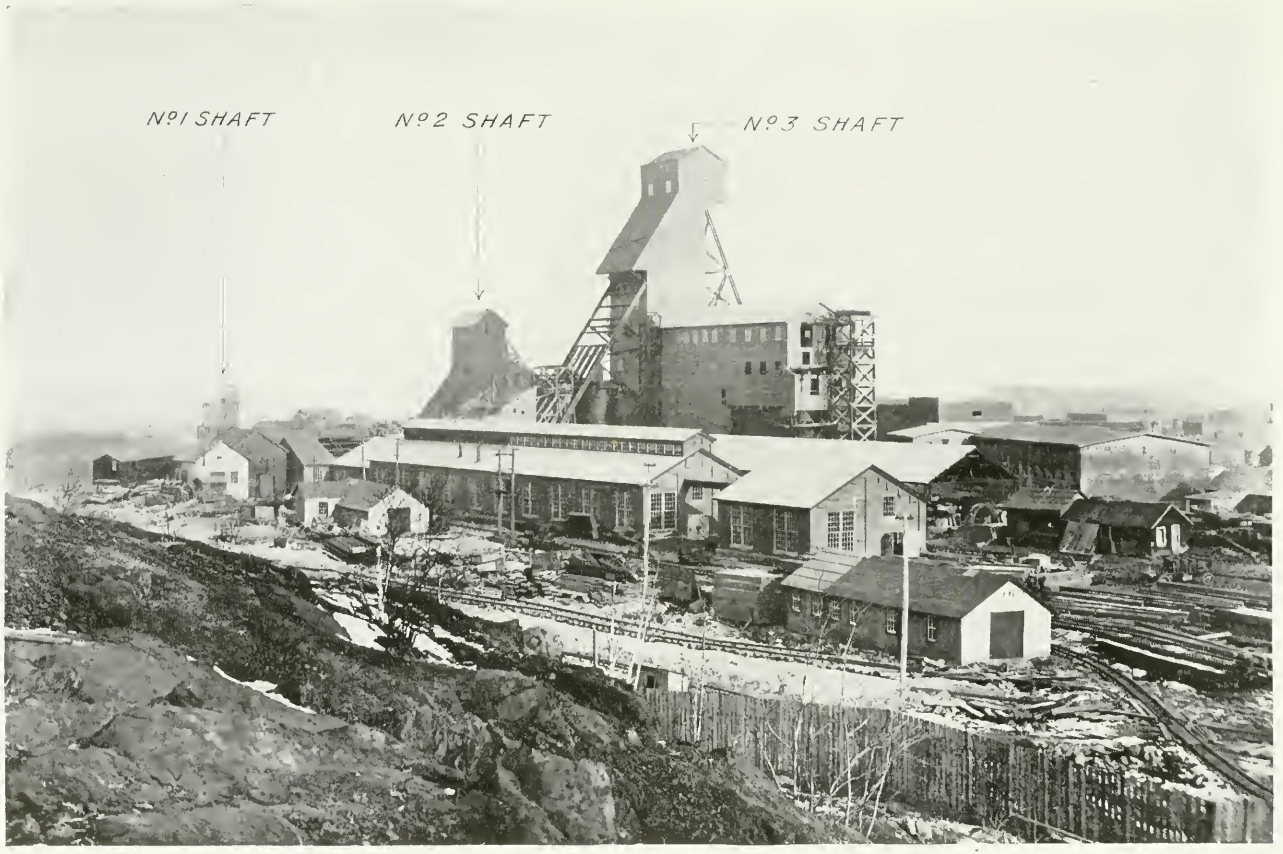
W. J. Hambly, Copper Cliff, was superintendent. About 75 men were employed.

Crean Hill.—Crean Hill mine shipped 174,995 tons during 1916. This came mostly from the extensions of the original open pit, above the second level, and from the fourth, fifth and sixth level stopes. No stoping was done below the sixth level. The work of changing the shaft from a three-compartment to a four-compartment shaft was completed from the sixth level to the ninth level.

An addition to the power house was built and a third compressor, of 2,500 cubic feet capacity, was installed. Also a small machine shop was built and equipped.

Charles Collins, Crean Hill, Ont., is superintendent. An average of 500 men was employed.

Creighton.—The Creighton mine shipped 1,084,301 tons of ore in 1916. This was an increase of more than 300,000 tons over the production of the previous year, and more than double the production of 1914. Some ore was obtained from the old third level floor in the open pit, also in working out the end of the ore body between the third and the fifth levels. Stoping in the west ore body between the fifth and sixth levels was continued during the year, but the production was relatively small. In the early part of the year, the main production was from the broken ore reserves above the sixth level. In the latter part of the year the main production was from



Creighton nickel-copper mine, Canadian Copper Company.

the stopes between the tenth and the sixth levels. Considerable ore was obtained from development on the twelfth level, where four stopes were partly developed and stoping begun. Development ore from this level was handled through two winzes from the tenth level.

The larger part of the stoping during the year was carried on between the tenth and the eighth levels, but a great deal of stoping was done in other parts of the mine.

Sinking on No. 3 shaft was stopped at the eighteenth level at a depth of 1,410 feet on the 55 degree incline or 1,155 vertical depth. Stations were cut in this shaft at the 6th, 8th, 10th, 12th, 14th and 16th levels. The shaft has been connected up to the main workings on the 6th, 8th, 10th and 12th levels. The skips in No. 2 shaft do not reach the 12th level, but the manway in this shaft does. Waste pockets were cut in No. 3 shaft on the 14th and 16th levels. An ore crusher pocket was cut on the 14th level. When this shaft is in commission, all ore will be passed down through this crusher before it reaches the loading pockets. Timbering was carried on in this shaft in the latter part of the year, and is now nearly completed. The shaft track consists of 85-pound rails resting on wall plates which are of 8 x 10 inches B.C. fir. These are spaced five and six feet apart. At intervals of thirty feet there will be put in concrete piers, which will serve to anchor the timbering. In addition to the waste and ore pockets on the 14th level, two development cross-cuts were begun, and the material from these was handled through this shaft. The seven-ton skips in No. 3 shaft will discharge directly into the new rockhouse, which is described elsewhere.

Motor haulage is now used on the 6th, 8th, 10th and 12th levels.

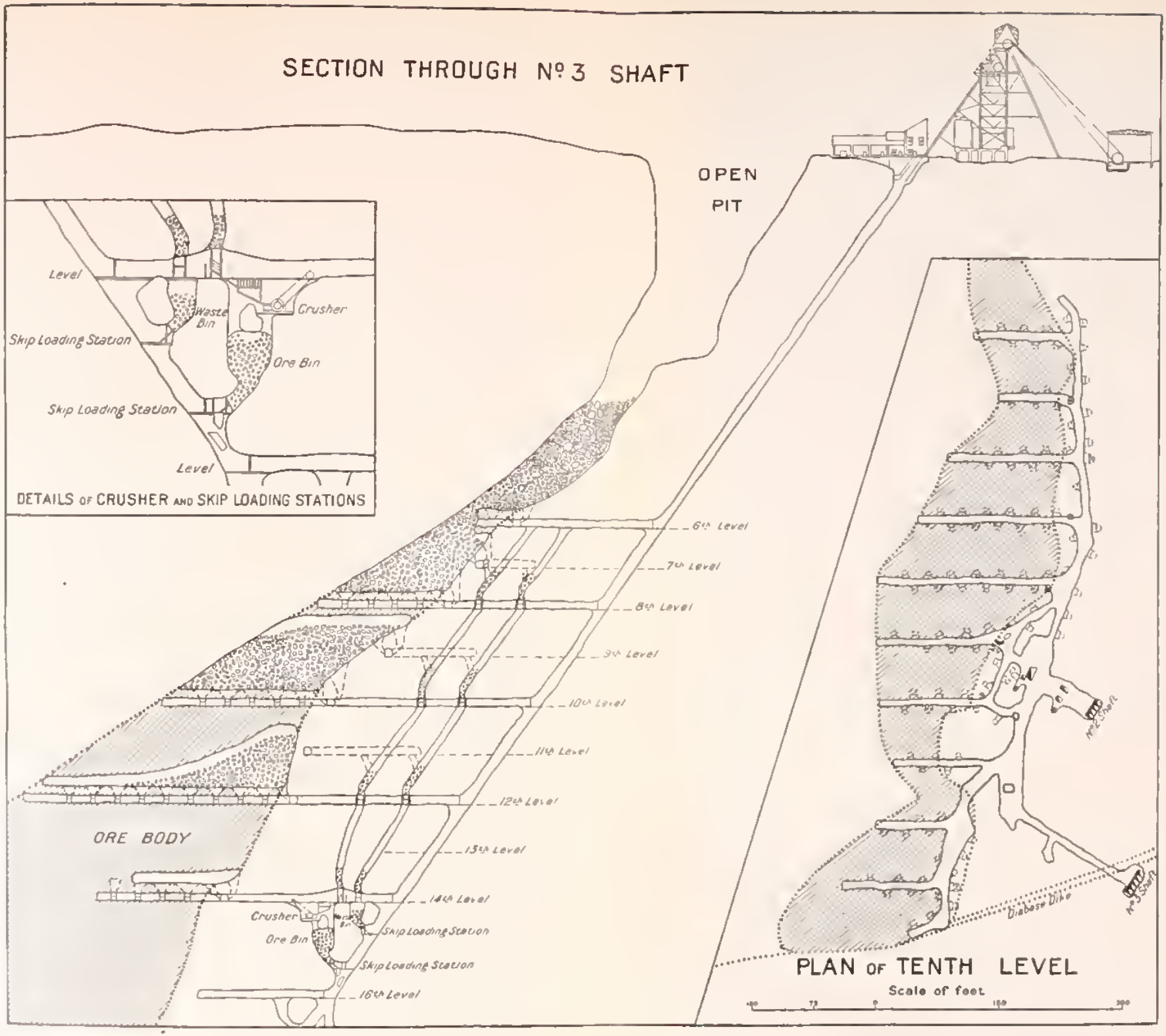
A good deal of construction work was carried on during the year. A hoist house, rock house, combined office and change house, and a steam-heating plant were built. A description of these, furnished by J. C. Nicholls, superintendent of mines, follows.

The No. 3 hoist house is constructed of hollow tile and brick. The floors are of concrete. A forty-ton crane serves the entire building. The interior is well lighted, and will contain nothing but the hoists and accessory equipment.

There will be two hoists, one for ore and one for waste, men and materials. The ore hoist is of the Ilgner type. It has two drums twelve feet in diameter, direct-connected to a 1,800 horsepower direct current motor. Brakes are of the post type, operated by weights and released by cylinders using oil under pressure. The motor generator for the operation of this hoist consists of induction motor, direct current generator and 50-ton flywheel. The hoist, with two skips in balance, will have a capacity of hoisting a load of nine tons of ore from a depth of 2,000 feet at a speed of 2,500 feet per minute.

The second hoist for men and material will be a geared hoist driven by an induction motor through single reduction gears. There will be two drums operating in balance which have a diameter of seven feet. All brakes are of the post type, which are set by weights and released by means of pressure oil. Two cages, each holding thirty men, will be used.

The No. 3 rockhouse was designed to have a capacity of 500 tons per hour,



METHOD OF MINING, CREIGHTON ORE BODY.

but at present it will be run at the rate of only 350 tons per hour. The plant is built in two units, either one of which can be run independently. Each feeder, screen, sorting belt, and crusher is driven by an independent electric motor. The building is made with a concrete base, upon which is erected the steel framework for the rockhouse and headframe. The walls are of hollow tile four inches thick. All floors are of reinforced concrete.

The ore is delivered to the rockhouse from the seven-ton skips, which deliver it into receiving bins. Two revolving feeders pass the ore to a revolving screen having six-inch round holes. The oversize goes to sorting belts where the waste is picked off, and the sorted ore is discharged into a crusher, which reduces the ore to a size suitable for smelting. The undersize from the first screens goes to a second pair of screens having three-inch round holes. The oversize then goes to sorting belts, and after sorting the ore is dropped into the same bin as that from the first sorting belts. The undersize from the second set of screens goes to a third set of screens having one and one-half inch round holes. This then passes to sorting belts, the sorted ore joining that from the previous sorting belts. The undersize from the last set of screens drops into a fine bin. From the bottom of the fine and coarse ore bins, the ore is loaded into railway cars for shipment to the smelter or roast yard.

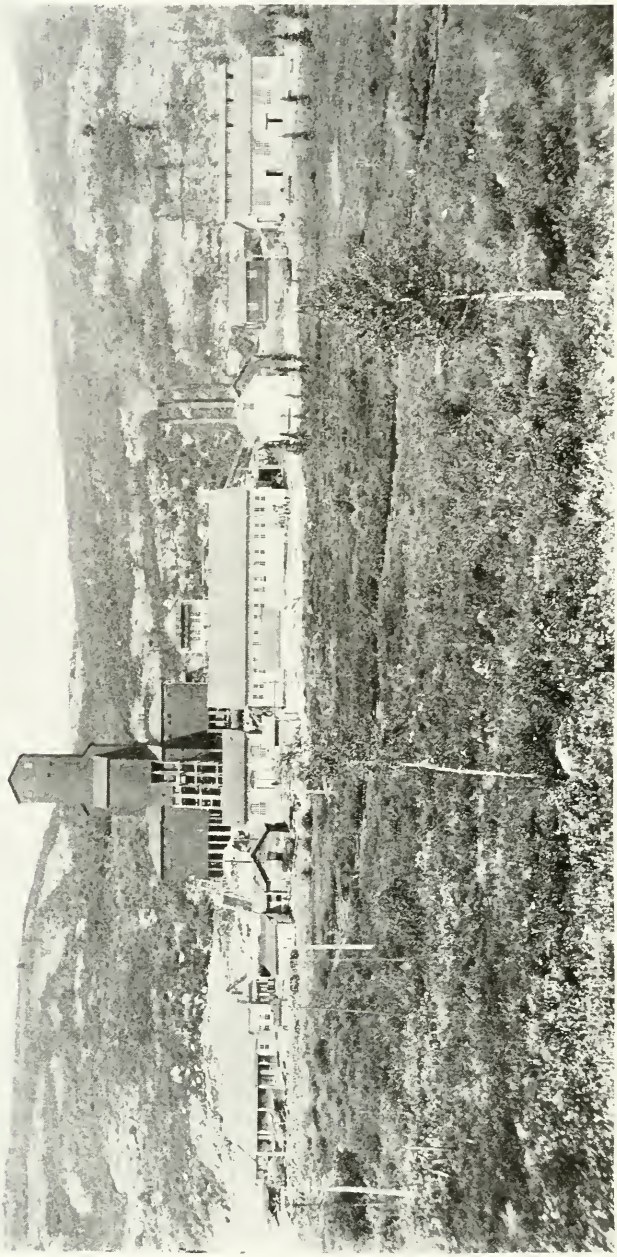
The change house is built to accommodate about 1,100 men. It is constructed with brick walls and reinforced concrete floors, which makes it absolutely fireproof. It is built with two floors, each having the same arrangement. There are tiers of lockers, the lower half of each locker being for street clothes, and the upper half for working clothes. This upper half is connected with a suction fan, which draws the air from the locker and discharges it outside the building. On one side of the building, and running its entire length, is a series of wash basins and shower baths. Each bank of lockers is near a washing place and a shower, so that the men do not have to go more than a few steps, and there is no congestion. After changing, the men pass through the time clocks, then through a covered passage-way to the collar of the shaft, the rockhouse, or the shops.

The office is adjoining the change house and connected with it. The upper floor will be used by the surveyors and draughtsmen. On the lower floor will be offices for the underground superintendent, master mechanic, mine clerk and doctor. There will also be an emergency room for the treatment of injuries.

A central steam-heating plant was erected from which the entire plant is heated. It consists of three one hundred and fifty horsepower horizontal tubular boilers, together with pumps and other accessories.

The steam is conveyed in well covered pipes to the different buildings. In each building is a bank of steam pipes which are heated. Air is drawn by these steam-heated coils by a centrifugal fan and distributed over the building through sheet-metal ducts. The air is thus kept in circulation in a way that is not possible in other systems employing direct radiation only.

In addition to the above, the power house was enlarged and a new 5,000 cubic foot compressor was installed. This compressor is of the Rogler valve type and was



Levack nickel-copper mine, Mond Nickel Company.

built by the Ingersoll-Rand Company. The power house has now a total capacity of 12,500 cubic feet of compressed air.

The new underground powder magazine and thaw, described in the Bureau report of 1915 operations, was put in commission during the year. It is interesting to note that the temperature in the unheated magazine remains very even at about 46 degrees Fahrenheit, even in the coldest weather. Very seldom does any powder need to be thawed, and then only because of freezing in transit from the manufacturers. Polar forcite is used in the cold season, and forcite in the warm.

Fifty-five houses were built in Creighton village in the year.

Charles Miller is superintendent. From 1,200 to 1,300 men were employed.

Mond Nickel Company, Limited

The Mond Nickel Company, Limited, operated the following mines in the Sudbury district, during 1916: Victoria, Garson, Worthington and Levack. A small quartzite quarry was operated, intermittently, near the Coniston smelter. In addition the company operated the old Bruce Mines, situated about thirty miles east of Sault Ste. Marie.

The head offices of the company in Canada are at Coniston. The officials are: C. V. Corless, manager; J. F. Robertson, superintendent of reduction works; O. Hall, mines superintendent.

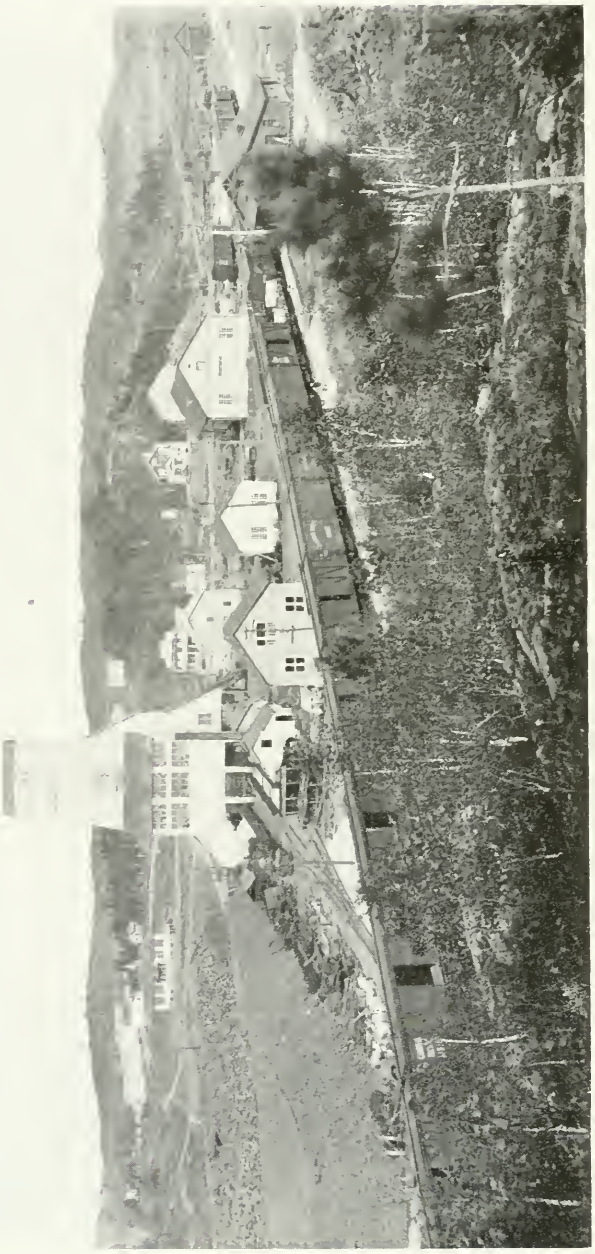
Bruce.—No. 1 mine, operated through the old number four shaft, began shipments in February, and has been producing steadily since. The greater part of production was from stopes between the third and fourth levels. The ore, a chalcopyrite in a quartz gangue, is shipped direct to the company's smelter at Coniston, where it is used for fluxing purposes. Shortage of labor curtailed both production and development. It is now planned to sink the shaft to the fifth level.

No. 2 mine, known previously as the Taylor shaft, shipped from above the 65-foot level until the end of April. The shaft was then put down to the 155-foot level, and development continued. No. 2 mine lies midway between No. 1 mine and the original Bruce workings near the lake front. These workings will explore a long section on the vein to which little attention had previously been given.

A. D. Carmichael, Bruce Mines, Ont., succeeded J. H. Stovel as superintendent in the month of March. From 60 to 75 men were employed at the two mines.

Levack.—Levack mine shipped about 68,600 tons to the Coniston smelter during 1916. About 30 per cent of the material hoisted is picked out as rock. Stoping was done on the first, second and third levels, but the larger operations were on the third level. Development work on the third level was continuous, and several large stopes, 100 feet between pillars, have now been opened up. During the year 3,228 feet of drifting and cross-cutting, and 1,199 feet of raising, mostly in connection with the third level, was done. The shaft was sunk 112 feet to a depth of 545 feet on the 65-degree incline.

The Nordberg compressor from the Frood Extension mine was set up at Levack in the latter part of the year. This gives, with the two other compressors,



Worthington nickel-copper mine, Mond Nickel Company.

a total capacity of 8,000 cubic feet of compressed air. A new blacksmith shop, 70 feet by 40 feet, was built. The machine shop was also equipped with the necessary machines. This mine has now a complete surface plant, a view of which appears in this report. The change house is a well designed and equipped building.

Thirteen cottages were built in the village, and 13 more were under construction at the end of the year.

F. J. Eager is superintendent; 260 men were employed.

Worthington.—Worthington mine hoisted 172,000 tons of unsorted ore during 1916, from which 77,800 tons of ore was shipped to the Coniston smelter, and this furnished nearly one-third of the metal production of the smelter. The balance of the hoisted tonnage is rock, hand-picked from the ore, and this is crushed and sold to the Canadian Pacific railway for track ballast. Stoping was done on the first and second levels, and one stope was opened up on the third level. Considerable development was done on the third level. The shaft was sunk 165 feet to a depth of 700 feet on the incline or 650 feet vertical. The fourth level station was cut at 650 feet, and 300 feet of drifting done on this level.

Coniston smelter, Mond Nickel Company.

Four cottages were built in the village during the year. Several of the swamps round the village have been drained, cleared, ploughed and fenced, by the company. These will be divided into small garden plots, which will be rented to employees at a nominal figure.

R. N. Palmer is superintendent; about 275 men were employed.

Victoria No. 1.—About 60,000 tons were shipped during 1916. This was obtained from the east ore body on the sixth level and from the west ore body on the ninth, tenth and eleventh levels. The shaft was sunk 300 feet to a depth of 2,625 feet. The twelfth level station was cut at 2,598 feet, and a drift was driven 300 feet towards the ore body.

The ten-foot double drum, motor driven, Nordberg hoist was put in commission early in the year. It is equipped with the latest safety devices.

W. J. Mumford is superintendent. About 135 men were employed.

Victoria nickel-copper mine, Mond Nickel Company.

Garson.—Operations at the Garson mine, last year, consisted mainly in taking out the remnants of old stopes above the fourth level, and in the development of stopes on the sixth level. One thousand feet of drifting was done on the eighth level. The shaft was sunk 150 feet to a depth of 1,020 feet, and stations were cut at the 900- and 1,000-foot levels. The output of 115,000 tons was lower than previous years, due largely to shortage of labour.

The only construction was the remodelling of the machine shop.

From 250 to 350 men were employed. A. L. Sharpe, superintendent for the past eight years, resigned late in December to take a commission in the Tunnellers, of the Canadian Expeditionary Forces. His place was taken by J. R. Thoenen.

Coniston Smelter.—Two furnaces and two convertors were operated steadily during 1916. The third furnace and converter were used as spares. Late in the year, alterations were begun in the plant to permit of the addition of two more furnaces and two more convertors. The sintering and flotation concentrating plants were operated continuously. No roasting of the ore in stock piles was done during the summer months. The last pile was lighted late in the winter, and no more were lighted until the fall crops were in. A small quartzite quarry was opened up to supplement the supply of quartz from Bruce Mines.

A permanent safety committee, composed of the department heads of the smelter, was organized in December to act in conjunction with a changing safety committee, chosen from the employees. This committee has been very active in endeavouring to make working conditions as safe as possible, and in trying to educate the employees against the danger of carelessness.

J. F. Robertson is superintendent of all reduction works, E. T. Austin of the smelter, and K. S. Clarke of sintering and concentrating plants.

About 500 men are employed at the smelter and machine shops.

Other Nickel Properties

Howland.—This property, on north half of lot 1 in the second concession of Drury township, was operated by A. D. Carmichael, under lease from the Canadian Nickel Company, Toronto, from August, 1915, to the end of April, 1916. About 800 tons was shipped to the Coniston smelter of The Mond Nickel Company; this ore was said to run from 6½ to 7 per cent. nickel and copper combined. About 75 per cent. of material mined was picked out as rock. The workings consisted of an open pit 23 feet deep, 25 feet wide and 40 feet long.

Mr. Carmichael was in charge and employed about 10 men.

Murray.—The British America Nickel Corporation resumed work at the Murray mine early in August. Work for the balance of the year was confined to unwatering the shaft, timbering and cutting stations in same. The 1,700 cu. ft. electrically driven compressor was removed from the Whistle mine and set up at the Murray. Power has been contracted for to run this compressor, and it is expected that development work will be pushed during the year 1917.

E. Hibbert, Nickelton, Ont., is superintendent of mines for the company. About forty men were employed.

Miscellaneous Mines

Goudreau Pyrite.—The Madoc Mining Co., at present controlled by the General Chemical Company of New York, operated their pyrites deposit at Goudreau during the season of navigation. About 67,000 tons were shipped to the works of the General Chemical Company in the United States. The deposit is worked as a steam shovel quarry. The ore is hauled to the mill, where it is crushed and sized before being shipped.

The plant is of steel frame, metal lath and concrete plaster construction. The boiler installation consists of Kieler water tube boilers, Rielly underfeed mechanical stokers, forced draft and a 125-foot brick stack. Bituminous slack coal is used as fuel.

During the year, ten cottages and seven log cabins were erected to accommodate married employees. The company's hotel for employees was burnt down early in the summer, and a new one, now under construction, is nearly completed. It will probably be the finest of its kind in Ontario. The concrete basement contains employees' change quarters, and is fitted with shower baths, lavatories and a well-equipped laundry. The first floor, of hollow tile construction, contains kitchen, dining, reading, lounging and bath rooms. The second floor, also of hollow tile construction, and the third floor, of lumber with asbestos board lining, are divided into fifty-seven bedrooms with bathrooms on each floor. The building has hardwood floors and is steam-heated throughout. Its over-all dimensions are 108 x 85 feet.

J. A. Battle, Jr., Goudreau, is superintendent. About 125 men were employed continuously.

International Copper.—The Mt. Ætna Mine, Davis township, was under development for a few months by International Copper, Limited. The company has a capitalization of $150,000. J. E. Boss, Sudbury, is president, and A. J. Manley, Sudbury, sec.-treas. The old shaft, ninety feet deep, was pumped out and some sinking done. No work was being done at the end of the year.

Massey Copper.—The Sable River Copper Mining Company, Limited, operated the old Massey mine until about the middle of July. It was then shut down, pending a reorganization that would provide funds needed for proper development of the property.

During operations the mine was baled out to below the fourth level, and a small amount of ore stoped out for the mill. A Callow oil flotation unit was installed in the mill, and a run of several months proved that the Massey ore could be successfully concentrated in this way. Jas. J. Flynn, Massey, Ont., was president and manager of the company, and A. E. Hall was superintendent.

The reorganized company, known as the Kenyon Copper Mines, Limited, has a capitalization of a million and a quarter dollars. A. W. McDougal, of Montreal, is president of the new company, and Jas. F. Flynn, Massey, Ont., is a director and the manager.

McDonald Copper.—The McDonald and Jackson property, comprising the greater part of lots 6, 7, 8, 9, and 10, concession V, Gould township, Algoma, was

optioned to Timmins interests in November, 1915. Seven carloads of ore, running from 12 to 17 per cent. copper, were shipped, but the option was thrown up in March, 1916. This property was locally called the Cheney mine, but should not be confused with the Cheney mine mentioned in the 1899 report of the Bureau of Mines, which is on lot 7, concession 1, Gould township.

Sudbury Copper.—The Sudbury Copper Company, Limited, acquired a copper prospect in Gladstone township, Algoma, and began operations in the latter part of 1916. The company is capitalized at one million dollars. Strachan Johnston, Toronto, is president, and Geo. E. Bent, Iron Bridge, Ont., manager. Sinking has commenced, and it is planned to put up a flotation concentrating mill if development shows up favourably. The small compressor and hoist are run by crude oil engines of the Diesel type.

About 12 men were employed.

Moose Mountain Iron.—Early in May, 1916, A. J. Anderson was made manager of the above company, and work on the property was resumed shortly afterwards.

Prospecting of the ore body, by trenches and diamond drills, blocked out a large tonnage above an adit level. A development cross-cut, on this level, was begun, and the ore was cut early in November. From this cross-cut development drifts will be run, both ways, on the ore. The plans, at present under consideration, are to mine the ore with a series of glory-hole pits along the ore body. The present cross-cut and development drifts will be used as main haulage ways. Five-ton cars, hauled by electric locomotives, will be used, the cars being loaded from chutes at the bottom of the glory-hole pits.

A series of tests has been carried on to determine the best methods of concentration and roasting. Considerable alterations of the flow sheet in the mill have been found necessary, and tests to determine the best crushing arrangements are still being carried out. The concentration of the ore presents no real difficulties. About a thousand tons of concentrates were shipped to United States, to different experimental plants, to ascertain the best methods of roasting. It was found that sintering, by either of the two methods in general use, would roast this ore successfully.

A. J. Anderson, Sellwood, Ont., is general manager. D. R. Thomas was superintendent until end of November, and was succeeded by C. S. Davis. From thirty to forty men were employed.

Long Lake Gold.—The Canadian Exploration Company, Ltd., continued operations on this property until the end of June. The plant was then shut down, as the known ore body had been worked out. Since that time the company have been diamond-drilling in hopes of picking up the ore body below the fault.

R. W. Brigstocke, Naughton, Ont., was superintendent. Prior to shut-down, about 90 men were employed.

Golden Rose.—The Golden Rose Mining Company, Limited, worked a short time during the summer of 1916, on its gold property, situated on the east shore

of Emerald lake, Timagami Forest Reserve. A shaft was sunk to a depth of 30 feet and trenching continued.

Six men were employed by Edward J. Townsend, president and manager of the company.

West Shining Tree and Wasapika Gold Field

An inspection trip was made into this district in September. The following prospects, on which work was being done, were visited.

The Caswell Mining Company, Limited, incorporated in Ontario, $2,000,000 capitalization, F. G. Moller, Buffalo, N.Y., president, and F. A. A. Campbell, Toronto, secretary, was employing 18 men. J. A. Knox, Orillia, was in charge. The crew were employed in stripping and trenching. Sinking was about to begin on a shaft already down fifty feet. Free gold was showing in several quartz veins, and some veins, not showing free gold, had given good assays. The company owned four claims in the township of MacMurchy.

The Burke, Bulloch and Cochrane group of claims were being trenched by the Mining Corporation of Canada, of Cobalt, they having a lease and bond on the property. D. McGavin was in charge, and seven men were employed. The principal vein had been uncovered and sampled over a considerable distance, and a shaft, forty feet deep, had been sunk. Free gold was to be seen on several veins on the property.

Barbara Mines Company, Limited, Geo. R. Rogers, manager, had a small force at work building camps and trenching. The company own seven claims in MacMurchy and Churchill townships. Operations had just been commenced at time of inspection.

The Atlas Mining Company, Limited, A. M. Bilsky, president, had a crew of 12 men trenching the surface of the Jefferson claims. Some very fine free gold showings had been uncovered on this property. Mr. Jefferson was in charge. No sinking had been done.

The above companies are in what is locally called the Wasapika camp.

In West Shining Tree the only active work being done was on the Holden claims. This property, under option to D. Rothchild, of Sudbury, had five men shaft sinking. The vain, ten to twelve feet wide, pans gold freely, and has been uncovered for about 300 feet. D. Clarke was in charge.

The following claims in Wasapika, which were not being worked, but on which development work had been done, were visited.

The Knoxwell Mining Company, owning two claims adjoining the Burke, Bulloch and Cochrane group, had sunk a 40-foot shaft, and had done considerable trenching. Three veins on the property show free gold.

The McVittie and Saville group, lying between the Casswell Mining Company and the Atlas Mining Company, has one shaft down 40 feet and another down 60 feet. The vein has been uncovered across two claims, and shows free gold in several places.

The McIntyre and MacDonald group, lying to the east of the Atlas Mining Company, has one shaft down 20 feet and another down 55 feet. Several veins show free gold.

Gilbert Bennett, owning two claims across the Montreal River from the McIntyre and MacDonald group, has a shaft down 40 feet.

In West Shining Tree the following two claims, not operating, were visited:—

The Gosselin Gold Mining Company, Russell Boulby, Toronto, president, own a group of eight claims. There is a large surface showing of quartz, said to carry values. A 40-foot shaft was sunk, and a large amount of stripping done.

Steep, Mitchell and Peddle have a shaft 93 feet deep on claim T.R.S. 2434. This shaft was worked in an unusual way. The partners, having no other means at their disposal, built a whim and operated the same with five sleigh dogs. A heavy inflow of water stopped their work.

Quarries

Bruce Mines.—The Bruce Mines trap rock quarry, W. S. Edwards, Sault Ste Marie, Michigan, trustee, was operated, under contract, by Mitchell and Powell. Crushing was started on May 15th, and operations were continuous until the close of navigation. About 750 tons were crushed and sized daily. Most of product was shipped to the new locks under construction at the American Sault. The balance was shipped to the United States for road-making purposes. E. Mitchell, Bruce Mines, was in charge. About 50 men were employed.

Dominion Mines and Quarries.—The Dominion Mines and Quarries, Limited, operated their quarry on East Neebish island during the season of navigation. The average daily output was about 300 tons, running 98 per cent. silica. The output is shipped to Buffalo, N.Y., where it is used in the manufacture of ferro-silicon. I. Appleton, McLennan P.O., Ont., was in charge. From 40 to 60 men were employed. E. F. Price, New York, is president, and Leighton McCarthy, Toronto, vice-president, of the company, which has its head office in the Dominion Bank Building, Toronto.

Humbug Point.—The Oscar Daniels Company of New York operated a trap rock quarry at Humbug Point, St. Joseph island. Considerable alterations were made to the plant in the early spring, and crushing was begun in May. The quarry was shut down in August, as the company were unable to get boats to handle their product. The output was all shipped to the new locks under construction at the American Sault. The plant is capable of crushing and sizing from 75 to 100 tons per hour. The bin storage, however, is small, and steady operations will depend on transportation facilities. D. Carrol was in charge. About 80 men were employed.

Killarney.—Willmott and Company, of Toronto, operated their quarry, near Killarney, on the northern shore of Georgian Bay, during the season of navigation. From 35,000 to 40,000 tons of quartz, averaging 98 per cent. silica, was shipped to The Electro Metals, Limited, of Welland, where it was used in the manufacture of ferro-silicon. D. Chisholm, Killarney P.O., was in charge. About 40 men were employed.

III.—DISTRICT OF TIMISKAMING

Gold

Boston Creek and Munro Township

Boston Creek.—The Boston Creek Mining Company, Limited, did considerable development work on claim L. 3665 in Boston township during the year. Work was carried on through the R.A.P. shaft, which was rented with hoisting equipment from the R.A.P. syndicate. The drifts on the 100 and 200-foot levels of the R.A.P. were extended into the Boston Creek ground and a raise carried to surface from the 200-foot level. A winze has been sunk 200 feet from the 200-foot level, and stations cut at the 300 and 400. Development is as follows: 100-foot level, 325 feet of drifting and cross-cutting; 200-foot level, 300 feet of drifting and cross-cutting; 300-foot level, 50 feet of drifting and cross-cutting; 400-foot level, 300 feet of drifting and cross-cutting.

In February and March, 1917, new buildings were erected including office, sleep camps, dining room and storehouse. Operations were suspended in July, 1917, to permit of exploration by diamond-drilling. A new central shaft will be located and work resumed in September, 1917.

Air is supplied by two Chicago Pneumatic Tool Company fuel oil compressors.

The officers of the company are: President, E. M. Richardson, New York; vice-president, W. B. Allbright, New York; secretary-treasurer, M. L. Quilliman, Niagara Falls, Ont.; managing director, H. D. Symmes, Niagara Falls, Ont.; mine manager, R. E. Margenan, Boston Creek, Ont.; 50 men were employed up to July, 1917.

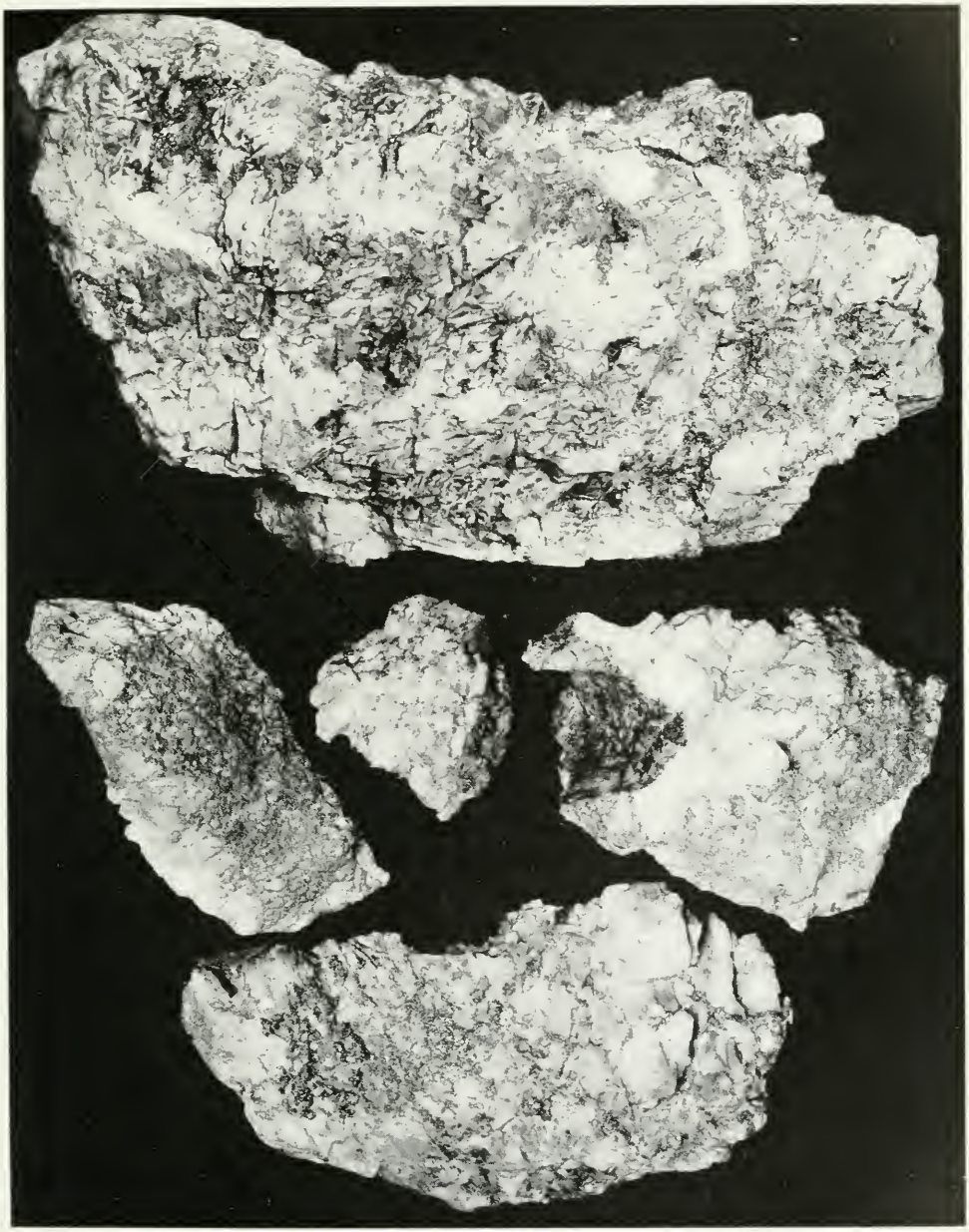
Boston-Hollinger.—This claim, on lot 3 in the sixth concession of Pacaud, was developed during the year by Messrs. Lyman and associates of Cobalt. A shaft was sunk 50 feet, and some drifting done at this level; 17 men were employed.

Boston Gold Leaf Mining Company.—This company did considerable development work on a claim east of the Boston Creek mine, on the boundary of McElroy and Boston townships. Work consisted of trenching and shaft sinking. Two shafts are said to be 40 feet deep, and a third 85 feet deep. Work was discontinued on December 15th, 1916, and in the spring of 1917 the claim was reported sold to the Western Mining Company.

Buffalo-Munro.—The Buffalo-Munro Gold Mines, Limited, worked a short time in 1916, on their claim, part of lot 6 in the first concession of Munro township.

Work was in charge of Wm. Fairbairn, and consisted of trenching and surface development. A shaft was sunk to a depth of 40 feet. Work was discontinued in the fall of 1916, and resumed in April, 1917.

Burton-Munro.—A promising prospect is being developed by the Burton-Munro Mines, Limited, on the north half of lot 11, in the first concession of Munro township. A shaft inclined at 55 degrees, had been sunk to a depth of



Five samples (about one-third actual size) of gold ore from Croesus mine, weighing 85 pounds and containing 480.7 ounces of gold and 47.5 ounces of silver, worth $10,000 approximately. These samples were purchased by the Ontario Bureau of Mines for exhibition purposes. The dark parts in the illustration represent gold. *See* frontispiece for full-size reproduction in natural colours of the right-hand central specimen.

150 feet when inspected July 19th, 1917. At the 150-foot level a drift was in progress to the north of the shaft, and on the date of inspection the heading was at 40 feet. It was the intention of the management to discontinue work in this drift, and sink the shaft to the 250-foot level. Very little work was done in 1916 with the exception of 1,000 feet of diamond-drilling, the erection of camps after the fire, and surface trenching.

The officers are: President, Charles Millar, Toronto; secretary-treasurer, A. W. Hunter; directors, Charles A. Gentles, J. G. Beatty, Archie Burton. David Sloan is manager, employing 25 men.

Croesus.—The Croesus Gold Mines, Limited, acquired in 1915 what was locally known as the Dobie-Leyson claim on the north half of lot 10, in the first concession of Munro township. Spectacular gold specimens were found in the shaft, some of which were purchased by the Bureau of Mines and added to the collection of the Bureau. These are exhibited annually at the National Exhibition, Toronto. The disastrous fire of July 29, 1916, destroyed all the buildings and surface equipment of the company, but work was resumed at once and new buildings erected. Development underground during the year 1916 was as follows: the shaft was sunk to the 400-foot level, and stations cut at the 300-and 400-foot levels. On the 150-foot level, drifting 465 feet; on the 200-foot level, drifting and cross-cutting 208 feet, raising 25 feet; on the 250-foot level, drifting 110 feet, cross-cutting 109 feet, raising 60 feet; on the 300-foot level, drifting 64 feet, cross-cutting 200 feet, raising 45 feet; on the 400-foot level, the south cross-cut was advanced 31 feet, and the north cross-cut 61 feet.

In July, 1917, the pumping capacity was found inadequate, and a temporary shut-down occurred until a larger pump could be installed.

A small amount of ore was milled at the Gold Pyramid Mining Company plant before the fire, and early in 1917 the company erected a small mill capable of treating 50 tons per day. The mill equipment includes one Allis-Chalmers jaw crusher, one Robb engine, one Martin 8 by 8 engine, and one Hardinge ball mill, with recovery by plate amalgamation.

The officers are: President, D. M. Steindler, New York; vice-president, Sir Mortimer Davis, Montreal; secretary-treasurer, Eugene L. Steindler, Cobalt; manager, Julius Cohen, Matheson. The head office of the company is 42 Broadway, New York, N.Y.; 40 men were employed during the year.

Miller-Independence.—The Miller-Independence Mines, Limited, worked throughout the year on their property, south half of lot one in the sixth concession of Pacaud township. Considerable development work was done. Shaft A is 76 feet deep with 150 feet of drifting and cross-cutting at the bottom level. Shaft B is vertical to a depth of 20 feet, and from this point follows the dip of the vein to a depth of 120 feet. A third shaft has been sunk on a 30° incline to a depth of 140 feet. On the date of inspection July 17, 1917, preparations were being made to sink shafts C and D.

The Nissen stamps have been replaced by a ball mill, the plate area doubled, and a Groch flotation machine installed; 20 men were employed during the year.

The officers of the company are: President, Geo. J. Miller; secretary, John C. Schaffer, Germantown, Ohio; treasurer, Ed. Rettich, Germantown, Ohio; directors, O. B. Brown, M. Kirkpatrick and John A. Read—all of Dayton, Ohio. M. W. Hotchkin is consulting engineer for the company.

McRae.—The McRae claim is the northeast quarter of the north half of lot 2, in the sixth concession of Pacaud township. Development work was carried on by the Crown Reserve Mining Company of Cobalt, and a shaft sunk 50 feet, during the summer of 1916. Numerous test pits were put down and considerable trenching done by the above company. Work was discontinued in September, 1916.

Peerless.—The Peerless Gold Mines, Limited, own the north half of lot 1 in the sixth concession of Pacaud, adjoining the Miller-Independence.

Camps were built in the fall of 1916, and considerable surface development done; one test pit is 25 feet deep. The chief owners are Messrs. McKinnon and Ogilvie of Montreal, and the work during the year was in charge of Neil Morrison, employing 8 men.

R. A. P.—During 1916, the R. A. P. Syndicate, controlled by Messrs, E. M. Richardson, W. B. Allbright and J. K. Papassimakes, continued development of the Kenzie claim. The shaft was sunk to the 200-foot level and drifting done as follows: On the 100-foot level east drift, 250 feet; west drift, 175 feet; 200-foot level east drift, 90 feet, west drift 190 feet.

The plant includes one 60-h.p. Jenckes locomotive type boiler, and one 5 by 7 Jenckes hoist. Work was discontinued by the syndicate September 17, 1916, and the shaft and hoisting equipment rented to the Boston Creek Mining Company. In July, 1917, preparations were under way to take over the shaft and resume work.

Kirkland Lake Gold Area

Development during 1916 in this area has proven the existence of another gold camp in Ontario of considerable importance. The Northern Ontario Light and Power Company extended its transmission lines from Cobalt to the Kirkland Lake district, a distance of about 70 miles, and is now delivering electric power to the various mines. It is possible that the Timiskaming and Northern Ontario Railway Commission will build a branch line from Swastika.

Elliott-Kirkland.—The Elliott-Kirkland Gold Mines, Limited, own claims L. 1616 and L. 1617 in the township of Teck, and sinking operations were commenced in December, 1916. When last inspected in April, 1917, the shaft was down 105 feet, a head frame was in course of construction, and a small motor-driven compressor and air hoist were installed. S. J. Renaud was in charge, employing 20 men.

Goodfish.—The Goodfish Gold Mines, Limited, own three claims, L. 2194, L. 2022, and L. 2571 in Morrisette township, near the southwestern corner. Prospecting of these claims was continued at intervals during the year and a shaft sunk 30 feet.

The officers of the company are: President, Harry Oakes, Kirkland Lake; vice-president, M. J. Brennan; secretary and manager, J. W. Morrison, Kirkland Lake; treasurer, Wm. Costello; director, Edwin W. Kearney, Haileybury.

Kirkland Lake.—The Beaver Consolidated Mines, Limited, continued development of the claims owned by the Kirkland Lake Gold Mines, Limited, and exercised its option on the stock of the latter by making the first payment on the due date, February 22nd, 1917.

During the year the following development work was performed:—

Drifting, 916.0 feet; cross-cutting, 617.5 feet; shaft sinking, 410.0 feet, total, 1,943.5 feet; station cutting, 149.0 cubic yards, sump cutting, 95.0 cubic yards, total, 244.0 cubic yards. Sinking was still in progress at the close of the year. The vein on which the shaft was sunk from the surface has been proven to the 600-foot level.

The following additions to the plant and surface equipment were made during the year. One 125 h.p. Jenckes boiler, one 10-drill compressor, an electric light plant, a new hoist capable of working to a depth of 900 feet, large bunkhouse and mess-room and office facilities. An assay office is also in course of construction. It is the intention of the management to erect a 100-ton mill during 1917, underground developments having proved satisfactory.

Jay Elliott of the Beaver staff is superintendent, and S. Donaldson is in charge of underground work. Forty men were employed.

La Belle Kirkland.—La Belle Kirkland Mines, Limited, is capitalized at $2,000,000, and owns seven claims in the townships of Teck and Lebel, near the south end of Goodfish lake.

Development was continued chiefly on claim L. 1751, where shaft A had reached a depth of 340 feet, with levels at 100, 270 and 340 feet. On the second level, 1,100 feet of drifting and cross-cutting was done. Diamond-drilling from this level was in progress in the fall of 1916. Shaft B is 55 feet deep, and shaft C 100 feet deep, and on various parts of the property there are test pits and shafts up to 50 feet in depth.

The head office is in the Sterling Bank Building, Fort Erie, Ont. The officers are: President, Dr. Edward J. Meyer; vice-president, Alfred A. Berrick; treasurer, Frederick A. Meyer; secretary, Charles S. Cadwallader, all of Buffalo, N.Y.; general manager, Frank C. Loring, Kirkland Lake P.O.: superintendent, Ernest M. Loring. Thirty men are employed.

Lake Shore.—The Lake Shore Mines, Limited, did very little development work on its claims during 1916. This company owns the following claims in the township of Teck, 2605, 2606, 2645, 2242, 1557, 1663 and 3601.

The mine was closed for four months during the year. It was pumped out in November, and preparations were made for the installation of electrically driven hoist and compressor ready for operation when the power line should be completed.

The shaft is 316 feet deep, with levels at 100, 200 and 300 feet. On the bottom level 750 feet of drifting and cross-cutting was done.

The officers are: President and treasurer, Harry Oakes; secretary and manager, J. W. Morrison; mine foreman, James McMillan, all of Kirkland Lake, Ontario; 36 men were employed.

Lucky Cross.—Mention is made elsewhere in this report, under the heading Trethewey, of the work done at this mine during 1916 by the Trethewey interests.

Minaker.—The Minaker Gold Mines, Limited, acquired a group of claims to the south of the Lake Shore property. Camps were erected, and a small amount of surface prospecting done in December, 1916. Work was in charge of T. J. Flynn, and it is the intention of the company headed by Frank Mapes of Rochester, N.Y., to push development in 1917.

Sylvanite.—The Sylvanite Gold Mines, Limited, owns the following claims in the township of Teck, adjoining the Tough-Oakes on the west: Nos. L. 2100, 2101, 2102, 2256 and 2257.

On the date of inspection November 18, 1916, six carpenters were employed erecting a head frame, shops and engine room. The shaft was 35 feet deep, and preparations were under way for the active development of the property on the completion of the power line.

The officers of the company are: President, Harry Oakes; secretary, Albert Burt, Toronto; manager, J. W. Morrison.

Teck-Hughes.—During the year the Buffalo Mines, Limited, continued development work of the Teck-Hughes mine and operated the milling plant described in detail in the 25th annual report of the Bureau.

On the date of last inspection, November 17th, 1916, shaft No. 1 was 180 feet deep, and shaft No. 3 located 700 feet west of No. 1, 264 feet deep, and in addition a winze had been sunk 150 feet from the shaft to a depth of 265 feet. Underground development proved satisfactory to the management, both in tonnage exposed and gold content.

The officers are: President, Chas. L. Denison, New York; vice-president, Robt. W. Pomeroy, Buffalo; general superintendent, Thos. R. Jones, Cobalt; superintendent, L. W. Ledyard, Kirkland Lake, Ont.; 36 men were employed.

Tough-Oakes.—The Tough-Oakes Gold Mines, Limited, has an authorized capital of 600,000 shares, par value $5 each.

The development during the year comprised 2,406 feet of drifting, 959 feet of cross-cutting, 351 feet of raising and 437 feet of sinking, or a total of 4,153 feet, bringing the total development to 9,347 feet.

The mill treated 37,263 tons of mine ore and 2,600 tons of tailings, or a total of 39,863 tons, from which was recovered $17.85 per ton.

To December 31st, 1916, the mine had produced 69,574 tons of ore of a gross value of $1,384,808, and ore reserves at that date were estimated to contain $1,000,000.

Four dividends of 12½ cents per share, amounting to a total of $265,750, were paid during the year.

C. A. O'Connell is manager. On an average about 200 men are employed.

Wright-Hargreaves.—The Wright-Hargreaves Mines, Limited, owns the following claims in Teck township adjoining the Tough-Oakes, Burnside and Sylvanite properties: Nos. 708, 709, 710 and 711.

On the last inspection, November 18th, 1916, 25 men were employed, chiefly in construction work, installing plant and erecting buildings, against the completion of the power line from Cobalt. The shaft was 25 feet deep.

Headframe while in course of construction, No. 3 shaft, Dome Mines.

The officers of the company are: President, Oliver Cabana, Jr.; vice-president, Edwin Lang Miller; secretary-treasurer, Gerhard F. Miller; manager, Albert Wende.

Huronia.—La Mine d'Or Huronia, Limited, includes four claims, L. 2586-7 in Gauthier township and L. 2588-9 in McVittie township. The mill was in

operation for part of the year. No. 1 shaft is 102 feet deep with 400 feet of drifting and cross-cutting. The property was shut down on December 2nd, 1916.

Goldfields.—The Associated Goldfields of Larder Lake were in operation during 1916. The main shaft has now reached a depth of 400 feet with considerable drifting and cross-cutting. The 30-stamp mill was idle during the year.

Porcupine Gold Area

Anchorite.—The Coniagas Mines, Limited, developed this property under option during 1916. A small amount of sinking and drifting was done in addition to considerable surface trenching and diamond-drilling. C. E. C. Smith is manager.

Davidson.—The Davidson Gold Mines, Limited, began operations in July, 1916, on the property previously known as the Crown Chartered, on lot 2, in the fifth concession, Tisdale township. The shaft, a vertical two-compartment one, was sunk 100 feet, to a depth of 312 feet, during the year. Three hundred and fifty feet of drifting and cross-cutting, mostly on the 300-foot level, was done. A raise was run from the 100-foot level to the surface. A second shaft, known as the "south shaft," was sunk to a depth of 50 feet.

D. R. Thomas was in charge; 50 men were employed at time of inspection in January, 1917.

Dome.—The Dome Mines Company, Limited, has an authorized capital of $5,000,000, of which $4,000,000 has been issued.

The officers of the company are: J. R. DeLamar, president and treasurer; W. S. Edwards, first vice-president; C. D. Kaeding, second vice-president; H. P. DePencier, third vice-president; Alex. Fasken, secretary; Alfred H. Curtis, assistant secretary and assistant treasurer. The directors are: J. R. DeLamar, W. S. Edwards, Alex. Fasken, G. C. Miller, J. S. Wilson, A. H. Curtis, A. V. Stout. The head office of the company is at 36 Toronto St., Toronto. C. D. Kaeding is general manager.

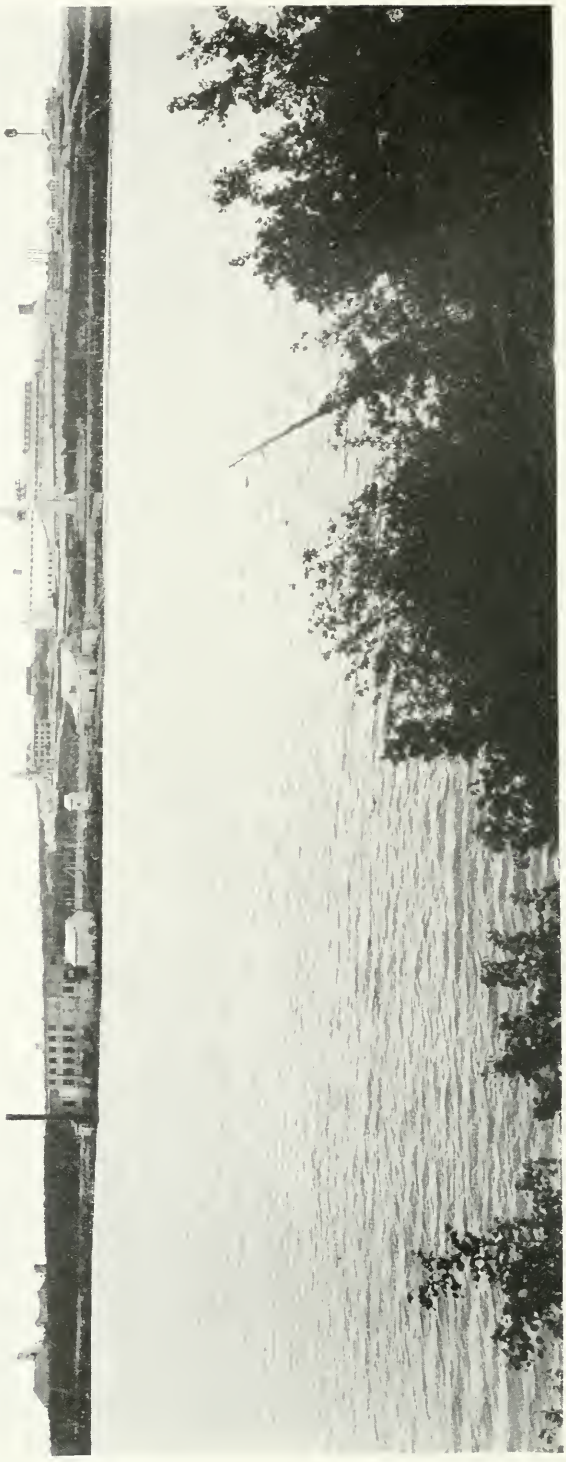
Four dividends of 5 per cent. each, amounting in all to $800,000, were paid during the year ending March 31st, 1917.

The plant extensions during the year brought the milling capacity up to 45,000 tons a month.

During the year a total of 465,272 tons was mined and hoisted. Of this, 459,530 tons was ore which was sent to the mill and treated, and 5,742 tons was waste which was dumped on the surface. In addition to the above, 157,000 tons of ore was mined and remained in shrinkage stopes. The 459,530 tons of ore treated in the plant yielded bullion worth $2,171,784.83, the average yield per ton being $4.726.

Of the 459,530 tons milled which averaged $5.083: 203,330 tons averaging $3.29 came from the pits, 219,342 tons averaging $6.98 came from the underground stopes, 36,858 tons averaging $3.68 came from the development.

The ore reserves as at April 1st, 1917, are estimated at 2,250,000 tons at $5.32, $11,979,000.



Hollinger Gold Mine, Porcupine.

Summary of Development

For Year Ending March 31st, 1917.

Level	Drifts	Cross-Cuts	Raises	Box Holes	Shafts	Stations	Ore Pockets	Waste Pockets	Total	Diamond Drilling	Grand Total
1st	.....	.....	26	.....	.....	.....	.....	.....	26	294	320
3rd	53	20	313	67	.....	.....	.....	.....	453	.....	453
4th	181	.....	201	.....	.....	.....	.....	.....	382	.....	382
5th	481	54	144	328	.....	.....	.....	.....	1,007	718.5	1,725.5
6th	1,062	410	440.5	313	.....	.....	.....	.....	2,225.5	3,733.1	5,958.6
7th	1,744	251	237	307	.....	.....	73	38	2,650	6,065.0	8,715.0
8th	10	.....	.....	.....	.....	64	.....	.....	74	.....	74.0
Shaft	.....	.....	.....	.....	234	.....	.....	.....	234	.....	234
Surface	.....	.....	.....	.....	.....	.....	.....	.....	.....	612.5	612.5
Totals	3,531	735	1,371.5	1,015	234	64	73	38	7,051.5	11,423.1	18,474.6

A second Bellis and Morcom compressor was completed, and work begun on a third unit of 2,500 cubic feet per minute. New winding engines were installed, a single-drum electric man-hoist, 8-foot diameter drum, geared through single reduction helical gear to 200-h.p. motor, rope speed 800 feet per minute, and one double-drum electric rock-hoist, 7-foot diameter drum, geared through single reduction helical gear to 350-h.p. motor; rope speed 1,000 feet per minute.

A 125-foot steel head-frame and ore bins were completed at No. 3 shaft. A 36 in. by 54 in. underground crusher unit was completed, and the electric haulage put in service.

In the mill, four of the five old tube mills were practically rebuilt, and three Hardinge ball mill units were completed, necessitating the removal of 20 stamps. The regrinding tube-mill circuit was completed, a set of sand-washing cones installed, and another 90-frame slime filter press erected, making five in all.

Dome Lake.—Operating their mill part of the time only, the Dome Lake Mining and Milling Company, Limited, treated 6,540 tons. Changes were made in the mill which now has a crushing capacity of 200 tons daily, and a cyanide capacity of 100 tons daily. Considerable underground development was done. R. T. Regnell is manager. About 60 men were employed.

Hayden.—The Hayden Gold Mines, Limited, continued development of its property in Ogden township during 1916. The shaft was sunk 216 feet to a depth of 318 feet, and 235 feet of drifting was done. The shaft is vertical and the property is being developed on the 100-foot, 200-foot and 300-foot levels.

Wm. Shovel is superintendent. About 16 men were employed.

Hollinger.—The Hollinger Consolidated Gold Mines, Limited, has an authorized capital of 5,000,000 shares of $5 par value each.

The officers of the company are: President, Noah A. Timmins, Montreal; vice-president, John McMartin, Cornwall; secretary-treasurer, David A. Dunlap, Toronto; managing director, P. A. Robbins, Timmins; directors, Noah A. Timmins, L. H. Timmins, John B. Holden, John McMartin, David A. Dunlap and P. A. Robbins; head office, 85 Bay St., Toronto.

During the year 1916, 604,062 tons of ore were hoisted containing $5,342,000; $3,126,000 was paid in dividends; $1,223,432 was paid out for labour and $954,300 for stores. The total costs, including taxes and depreciation, amounted to $4.03 per ton of ore milled.

Expenditure for plant and equipment amounted to $599,417.16.

Mine development amounted to 20,280 feet as follows:

Level	Shafts	Drifts	Cross Cuts	Raises	Winzes	Diamond Drilling	Timbering. Shafts & Winzes	Timbering. Stopes
	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet
100 feet	.....	70	.....	48	.....	.....	.....	237
200 feet	239	2,695	1,074	297	.....	1,128	166	2,146
300 feet	202	1,895	2,522	167	.....	433	214	2,011
425 feet	281	2,908	2,262	1,394	.....	788	251	2,062
550 feet	25	1,384	111	.....	.....	190	6	777
675 feet	.....	424	124	10	.....	.....	.....	.....
800 feet	32	1,124	1,626	.....	.....	695	.....	.....
1,100 feet	.....	.....	.....	.....	121	.....	120	.....
1,250 feet	.....	171	60	.....	14	196	18	.....
	779	10,671	7,779	1,916	135	3,430	775	7,233

The stoping record for the year is shown in the following table:

Level	Broken Ore in Stopes Jan. 1, 1916	Ore Broken during 1916	Ore Removed during 1916	Broken Ore in Stopes Dec. 31, 1916.
	Tons	Tons	Tons	Tons
100 feet	1,850	20,655	18,214	4,291
200 feet	74,500	203,947	205,525	72,922
300 feet	36,360	134,047	133,744	36,663
425 feet	24,600	185,381	127,288	82,713
550 feet	500	28,820	18,730	10,590
675 feet	.....	729	729	.....
800 feet	.....	28	28	.....
	137,810	573,607	504,258	207,179

The company makes the following statements as its ore reserves:

——	Tons	Value Per Ton	Estimated Gross Value Dec. 31, 1916	Estimated at Dec. 31, 1915
		$ c.	$	$
No. 1 Vein	325,190	11 19	3,639,170	4,946,500
No. 2 Vein (North)	64,690	14 62	946,030	1,844,500
No. 2 Vein (South)	97,070	7 64	741,700	1,070,500
No. 3 Vein	18,000	5 10	91,920	113,000
No. 4 and 50 Veins	613,140	8 25	5,059,480	6,220,550
No. 5 Vein	32,540	10 00	325,400	753,280
No. 7 Vein	17,000	10 47	178,000	178,000
No. 8, 38 and 53 Veins.	637,890	7 60	4,849,340	3,820,230
No. 10 Vein	25,400	7 35	186,800	186,800
No. 13 Vein	37,000	5 54	205,009	137,400

—	Tons	Value Per Ton	Estimated Gross Value Dec. 31, 1916	Estimated at Dec. 31, 1915
		$ c.	$	$
No. 14 Vein	162,080	8 81	1,427,470	1,728,920
No. 15 Vein	65,010	10 19	662,830	267,200
No. 16 Vein	7,040	7 40	52,100	296,600
No. 26 Vein	24,860	9 33	231,980	.....
No. 37 Vein	20,750	8 45	175,440	292,700
No. 41 Vein	317,730	7 32	2,326,130	2,484,820
No. 44 Vein	8,000	20 00	160,000	160,000
No. 51 Vein	14,600	6 36	92,900	92,900
No. 52 and 52A Veins	86,460	10 09	872,260	479,630
No. 54 Vein	122,260	7 21	881,540	1,037,170
No. 55 Vein	47,570	13 13	624,680	.....
No. 56 Vein	88,210	6 07	535,670	213,770
No. 58 Vein	276,000	8 96	2,472,610	1,502,720
No. 59 Vein	57,970	10 84	628,690	628,690
No. 65 Vein	49,300	12 47	614,760	614,760
No. 74 Vein	14,000	4 21	59,000	59,000
No. 79 Vein	17,730	5 52	97,800	97,800
No. 83 Vein	24,780	5 79	143,660	143,660
No. 84 Vein	99,120	7 01	695,110	39,620
No. 85 Vein	217,540	7 75	1,687,010	1,199,840
No. 88 Vein	2,970	14 74	43,800	43,800
No. 200 Vein	3,300	18 77	61,950	61,950
No. 204 Vein	5,920	6 40	37,890	37,890
No. 206 Vein	7,360	6 95	51,160	51,160
No. 207 Vein	42,000	6 00	252,000	252,000
No. 226 Vein	12,180	30 37	370,000	.....
Surface	275,880	9 80	2,704,255	2,780,500
	3,938,540	$8 68	$34,185,535	$33,837,870

In connection with the above summary of ore reserves the managing director, P. A. Robbins, makes the following remarks in the company's printed report for 1916:

Ore reserves have been estimated upon the same basis as previously, although they are somewhat more conservative in that certain doubtful valuations have been eliminated. In spite of greatly curtailed development, we still show approximately the same reserves as we did in last year's report, and during the interval there has been removed from the mine 604,062 tons, containing $5,342,234.77, an average of $8.84 per ton.

In estimating the reserves we use the actual measurements of the ore in place, but when the ore is mined it is not possible to prevent a certain amount of waste rock from being broken and becoming intermingled with the ore. This dilution with waste has the effect of lowering the value per ton of the mixture, although it increases the number of tons. Our experience, after five years of operations, has been that there is a dilution of approximately 10 per cent., and hence the present estimate of 3,938,540 tons at $8.68 per ton will when milled probably yield approximately 4,300,000 tons, averaging about $7.75 per ton.

It gives me pleasure to report that all of our underground developments have been highly favorable, and once normal conditions of labor are restored there can be no doubt but that developments will continue to show increases in total values of ore beyond those contained in the present estimates.

Maidens-Macdonald.—This property on claim M.R. 826, Deloro township, was developed, under option, by the La Rose Mines, Limited, of Cobalt.

No. 1 shaft, vertical, was sunk 107 feet. No. 2 shaft, inclined at 65 degrees, was sunk 100 feet. It was planned to join these shafts by a drift on the 100-foot level, and some drifting was done. The option was thrown up in March, 1917.

G. C. Bateman was manager, and about 20 men were employed

McEnaney.—The Hollinger Reserve, on lots 2 and 3, in the fifth concession of Ogden township, now known as the McEnaney Gold Mines, was re-opened in September of 1916. The mine was pumped out in January, 1917. It is developed to the 200-foot level by a vertical two-compartment shaft. An inclined winze runs from the 200-foot to the 300-foot level. Five hundred and fifty feet of drifting and cross-cutting had been done by the former company on the 100-foot level: 2,180 feet on the 200-foot level, and 650 feet on the 300-foot level. At the time of inspection in January, 1917, 18 men were employed and William M. Sixt was manager. Bernard McEnaney is owner and operator of the property.

McIntyre.—On January 1st, 1917, the assets of the McIntyre Jupiter and McIntyre Extension companies were amalgamated with those of the McIntyre Porcupine Mines, Limited, and the combined properties are now operated by the McIntyre Porcupine Mines, Limited. The capitalization was increased from 3,000,000 to 4,000,000 shares of $1 par value each. Of this amount, 3,600,000 shares have been issued and the balance remains in the treasury as unsold shares. The following development work was done during the 15 months' period from April 1st, 1916, to June 30th, 1917, chiefly in No. 5 shaft and McIntyre Extension shaft on the north shore of Pearl lake:

Station cutting	210 feet.
Shaft sinking	689 "
Drifting	3,307 "
Cross-cutting	1,409 "
Raising	897 "
Diamond drilling	5,300 "

The total lateral and vertical development in all the properties to June 30th, 1917, was 44,997 feet. No. 5 shaft is now 1,000 feet deep, with levels at every 100 feet.

The McIntyre Extension shaft, formerly known as the Pearl Lake shaft, is connected on the 1,000-foot level with No. 5 workings and drifting is in progress to connect with the Jupiter, a distance of 2,300 feet. The Jupiter shaft is 680 feet deep, with sinking in progress to the 1,000-foot level.

When this development is completed, all the ore from the three workings will be delivered to pockets at the 1,000-foot station of the Extension shaft, which will become the main hoisting shaft of the workings north of Pearl lake.

At this shaft a new electrically operated Jenckes hoist has been installed; also a No. 7½ Gates crusher followed by a set of 54 inch by 24 inch rolls. From the rolls the ore is delivered to the pockets by a belt conveyor, and to the mill on the south shore of the lake by an aerial tram with a capacity of 75 tons per hour. The ore from the Jupiter shaft is hauled on a narrow gauge track to the rock house at No. 5 shaft. This will be done away with when the underground development as mentioned above is completed.

A new transformer house has been erected during the year near the main shaft, and 3-600 k.va. transformers installed. The air capacity has been increased by the installation at the main shaft of one Ingersoll Rand direct-connected compressor, capacity 3,000 feet per minute.

A new dry house has been planned, and ultimately the warehouse and all

the shops will be centrally located in the area between No. 5 shaft and the main shaft on the north shore. During the 15-month period ending June 30th, 1917, the mill treated 195,327 tons of ore with a gold production of $1,864,914.28, representing an average value per ton milled of $9.547. A fourth unit "D" of 150 tons has been added to the mill, which has now a capacity of 600 tons per day.

The ore reserves were greatly increased during the year.

The officers of the new company are as follows: President, J. P. Bickell, Toronto; vice-president, Sir Henry M. Pellatt, Toronto; secretary-treasurer, M. P. Van der Voort, Toronto; directors, W. J. Shepard, Waubaushene; J. B. Tudhope, Orillia; E. F. B. Johnston, Toronto; H. D. Symmes, Niagara Falls; general manager, R. J. Ennis, Schumacher; mine superintendent, J. E. McAllister; mill superintendent, A. Dorfman. An average of 320 men was employed during the year.

Newray.—The Newray Mines, Limited, began operations on the Rea property, in Tisdale township, in July, 1916. Surface trenching and diamond-drilling was done in 1916. Mine de-watering was begun in December, and completed January 15th, 1917. A 1,000-foot cross-cut is to be driven on the 400-foot level.

The capitalization of the company is $1,500,000. Dr. Bixby, Buffalo, N.Y., is president, and James E. Day, Toronto, is secretary. C. P. Charlebois is manager. About 25 men were employed.

Porcupine Crown.—The Porcupine Crown Mines, Limited, has an authorized capital of 2,000,000 shares of a par value of $1 each. The officers of the company are: John W. Carson, president; W. I. Gear, 1st vice-president; J. G. Ross, 2nd vice-president; James Cooper, secretary and treasurer. The directors are: John W. Carson, W. I. Gear, J. G. Ross, C. A. Smart, J. W. Ross, A. G. Gardner, R. W. Reford, F. S. Meighen, Z. Gallagher, James Cooper. S. W. Cohen is general manager and M. W. Summerhayes manager.

During the year, 1916, 51,273 tons of ore were milled of an average value of $11.78. The net value of the production after deducting mint charges was $571,652.50; 1,753 feet of development and 4,156 feet of diamond-drilling was done during the year.

The ore reserves are given in the annual report as 97,000 tons of a value of $1,050,000. Dividends paid during the year amounted to $240,000, bringing the total dividends to $720,000.

Premier.—This property on lot 6 in the sixth concession of Deloro township, previously known as the Standard Gold Mines, was taken over by the Porcupine Premier Gold Mines, Limited, in January, 1916. Work done during the year comprised 378 feet of drifting, 40 feet of raising and 50 feet of sinking. When inspected in January, 1917, sinking to the 200-foot level was in progress.

George W. Fields, 19 Congress Street, Boston, is president of the company, which is capitalized at $1,000,000. B. M. Walton is superintendent; 14 men were employed.

Porcupine-Vipond-North Thompson.—The holdings of the North Thompson Associated Gold Mines were amalgamated on December 15th, 1916, with those

of the Vipond Gold Mines, and a new company formed known as the Porcupine V. N. T. Gold Mines, Limited.

Development during the calendar year 1916 at the North Thompson mine was as follows: The 3-compartment shaft was sunk to the 600-foot level and stations cut at the 50-100-200-300-400-500 and 600-foot levels; 2,000 feet of drifting and cross-cutting were done chiefly at the 400-500 and 600-foot levels. On the bottom level a cross-cut had been driven from the station a distance of 100 feet to the northwest and the vein drifted on for 50 feet. An incline tramway has been erected from the North Thompson shaft to the Vipond mill. It is the intention of the management to connect with the Vipond workings underground by drifting on the 600-foot level.

At the Vipond mine the main shaft was sunk from the 300 to the 400-foot level and a winze sunk from the 400 to the 500-foot level. On the 400 and 500-foot levels 1,000 feet of drifting and cross-cutting were done during the year, in the general direction of the North Thompson workings. About 2,000 feet of diamond-drilling were done on the property during the year.

The ore mined amounted to 43,041 tons, from which was recovered 12,508.9 Troy ounces of gold bullion. This yielded 8,508.7 fine ounces of gold and 1,255.0 ounces of silver. The average tonnage treated per calendar month was 3,681 tons.

The costs for the year were as follows:—

Average milling costs	$1.13	per ton.
Average mining costs	2.31	" "
General costs	.29	" "
Total costs at mine	$3.73	per ton.

The milling practice remains the same as last report. The ore is first crushed in a 16 by 10 jaw crusher, Blake type, and elevated to bins. It is then crushed in one 6-foot and one 4½-foot Hardinge ball mill, followed by two Hardinge pebble mills. It then enters a closed Dorr classifier circuit, cyaniding by the continuous counter-current decantation method, through Merrill presses, with precipitation by zinc. The boiler and compressor plant will be moved from the Vipond to the North Thompson. A new electrically driven Ingersoll Rand, two-stage compressor, capacity 1,050 feet, was installed at the Thompson during the year, which gives, with the Vipond plant, an air capacity of 2,500 feet.

The officers of the company are: President, H. H. Ward, New York; 1st vice-president, F. H. Hamilton, London, England; 2nd vice-president, P. N. Furber, London, England; secretary-treasurer, R. J. Ward, New York; directors, R. T. Shillington, Haileybury; James J. Hill, St. Paul; D. I. Jackson, Sir Henry M. Pellatt, Toronto; the head office is 50 East 42nd St., New York. The general manager is N. J. Evered, Box 189, Timmins.

Schumacher.—The Schumacher Gold Mines, Limited, has an authorized capital of 2,000,000 shares of a par value of $1.

The officers of the company are: F. W. Schumacher, president; F. L. Culver, vice-president; Earl S. Davis, treasurer; F. A. Hammond, secretary. The directors are: F. W. Schumacher, H. E. Tremain, Jas. Y. Murdoch, O. C. Manly and F. L. Culver. The head office is at 85 Bay St., Toronto.

The following information is taken from the second annual report of the company, covering the operations for the nine months ending March 31st, 1917.

The mill treated 35,271 tons of an average value of $5.24.

The following work was accomplished during the nine months' period:

Main Shaft—

Level	Sinking	Drifting	Cross-cutting	Raising	Diamond-drilling
100-foot	.....	813.6 ft.	179.2 ft.	36.0 ft.	270.0 ft.
200-foot	.....	411.8 ft.	424.8 ft.	14.5 ft.	333.5 ft.
300-foot	.....	128.9 ft.	101.0 ft.	.....	916.5 ft.
400-foot	.....	146.0 ft.	.....	38.5 ft.	160.0 ft.
600-foot	.....	66.6 ft.	.....	.....	62.0 ft.
	.....	1,566.9 ft.	705.0 ft.	89.0 ft.	1,742.0 ft.

No. 4 Shaft—

200-foot	185.0 ft.	31.0 ft.	200.0 ft.	.....	509.0 ft.
	185.0 ft.	1,597.9 ft.	905.0 ft.	89.0 ft.	2,251.0 ft.

Stoping—

Level	Broken Ore in Stopes June 30, 1916	Ore Broken July 1, 1916, to March 31, 1917	Ore Removed July 1, 1916, to March 31, 1917	Broken Ore in Stopes March 31, 1917
100-foot	3,500 tons	9,835 tons	10,204 tons	3,100 tons
200-foot	1,500 "	8,420 "	9,339 "	600 "
300-foot	600 "	7,100 "	6,749 "	950 "
400-foot	.....	6,374 "	4,287 "	2,100 "
	5,600 tons	31,729 tons	30,579 tons	6,750 tons

In addition to the above 4,596 tons of waste were hoisted from development work.

Ore reserves are estimated by the management as follows:

Main Shaft—

Above 100-foot Level.....	20,980 tons	valued at	$157,350 00
Above 200-foot Level.....	30,945 tons	valued at	210,540 00
Above 300-foot Level.....	18,700 tons	valued at	109,100 00
Above 400-foot Level.....	9,750 tons	valued at	45,050 00
Above 600-foot Level.....	4,000 tons	valued at	16,000 00
	84,375 tons	valued at	$538,240 00

No. 4 Shaft—

Above 200-foot Level.....	5,000 tons	valued at	81,500 00
	89,375 tons	valued at	$619,740 00

Tommy Burns.—The Tommy Burns Gold Mines, Limited, did a small amount of work on its property in the southeast corner of Shaw township. One shaft is down 40 feet, and another 25 feet. Wm. Hatch is manager.

West Dome.—The West Dome Consolidated Mines, Limited, resumed operations on the West Dome property in March, 1916. The shaft, inclined at 62 degrees, was sunk 260 feet during the year. It is now 350 feet on the incline, with levels at 100 and 300-foot vertical depths. Nine hundred feet of drifting and cross-cutting was done, mostly on the 300-foot level.

The capitalization of the company is $3,000,000. Sir H. M. Pellatt, of Toronto, is president. C. H. Menaton, Traders Bank Building, Toronto, is secretary. W. J. Trethewey is manager; 35 men were employed.

Slade-Forbes Asbestos.—An interesting development in the Porcupine district during the latter part of 1916, was the opening up of an asbestos deposit in the southeast portion of Deloro township by Messrs. Edward Slade and J. M. Forbes of Montreal.

Actual mining was started on January 10th, 1917, and a ton of hand-cobbed, No. 2 asbestos was shipped as a trial lot on January 19th. This pit when inspected on January 18th, was 25 feet long, 15 feet wide and 10 feet deep.

Messrs. Slade and Forbes, who had previously operated in the Thetford district of Quebec, stated that the deposit contained a higher percentage of crude, though of a somewhat inferior quality, than those in the Thetford district. As the property was taken up after the snow fell, the full extent of the deposit was not known, but it is said to be at least 100 feet wide; 12 men were employed.

Alexo Nickel.—During 1916 the Alexo Mining Company, Limited, shipped 8,288 tons of nickel ore, of nearly 5 per cent. grade, to the Coniston smelter of the Mond Nickel Company, Limited. The shaft was sunk 110 feet to a depth of 185 feet. A second level was cut at 120 feet, and some development done on this level on the east side. The west side of second level was previously worked from a winze. Wm. Anderson is manager; 20 men were employed.

Silver Mines of Cobalt and Vicinity

Adanac.—The Adanac Silver Mines, Limited, continued development on its property in the southeastern part of Coleman township, formerly known as the Pan-Silver.

Work was confined to the Patterson shaft, which was sunk to a depth of 408 feet with station at 392 feet.

The west winze was sunk 110 feet and 122 feet of drifting done. The east winze was sunk to the 121-foot level with a sub-level at 77 feet. A total of 248 feet of drifting and cross-cutting was done on this sub-level, also 154 feet of drifting at the winze bottom.

In the course of the development several calcite veins and stringers showing ruby, smaltite and some native silver have been encountered.

During the year 10 men were employed by the contractors, Purdy Bros., under superintendent George Randolph, Cobalt.

The officers of the company are: President, R. A. Cartwright; vice-president, E. N. Campbell; treasurer and managing director, Morgan R. Cartwright; secretary, E. M. Boyd; directors: R. A. Cartwright, E. N. Campbell, M. R. Cartwright, C. N. Bushnell, A. B. Hind.

Aladdin.—The Chambers-Ferland mine was operated during 1916 by the Aladdin Cobalt Mining Company, Limited.

Work was confined to No. 4 shaft west of the railway, and practically to the 425-foot and 350-foot levels. Most of the ore produced came from veins 18, 15 and 64, and early in 1917 development 100 feet north of 64 vein was continued by sinking No. 4 winze, in No. 24 cross-cut.

The ore was milled at the Northern Customs concentrator.

The officers of the company are: President, Major Conrad Jorgenson; secretary-treasurer, F. F. Fuller; directors, Major Charles Gold, Dennis Herbert, H. B. Sedgwick, all of London, England. The Canadian advisory board consists of R. T. Shillington, C. A. Richardson and Arthur Ferland, all of Haileybury, with Alex. Fasken of Toronto, secretary.

J. A. McVichie, Cobalt, is manager. About 50 men were employed during the year.

Beaver.—The Beaver Consolidated Mines, Limited, have an authorized capital of 2,000,000 shares of a par value of $1. The officers of the company are: F. L. Culver, president and general manager; F. C. Finkenstaedt, vice-president; H. E. Tremain, secretary-treasurer. The directors are: F. C. Finkenstaedt, F. L. Culver, F. L. Lovelace, W. Thos. Mason, W. E. Stevenson, H. E. Tremain, J. H. Black. The head office is at the Lumsden Building, Toronto. The mines are at Cobalt, Elk Lake and Kirkland Lake.

The work done at the Beaver mine, Cobalt, during the year is shown in the following table:

Drifting	3,115.0	feet
Cross-cutting	2,174.0	"
Sinking	229.0	"
Raising	1,101.9	"
Total	6,619.9	"
Stoping	6,512.2	cubic yards.
Station cutting	34.0	" "

Regarding the development on the 1,600-foot level the annual report of the company makes the following statement:

On this level a very interesting development has taken place during the past year. After completing our station, cross-cuts were driven both east and west of the shaft, and a number of veins encountered, some of which have given small silver values. In No. 1 cross-cut two large quartz veins were cut, one of which has been drifted on for quite a distance without encountering any silver values. In No. 2 cross-cut to the west a large vein of from six to eight inches in width was recently cut. This vein showed native silver, and leaf silver is scattered through the wall rock for a distance of about four feet on both sides of the vein. A short distance farther on another vein was encountered, but from the direction of these veins, it would appear as though they would soon join. The character of the veins, where cut, and the general condition of the formation, leads us to believe that we are probably on the top of an ore body, consequently a station has been cut and we are preparing to sink a winze to prove the ground at this point.

We might mention that, as the general character of the formation of the ground along the lower contact does not correspond with that of the upper contact, the work on the upper levels of the mine does not serve as any guide in the development of the lower contact.

The total production for the year amounted to 566,964 ounces of silver. The mill treated 34,766 tons of ore.

One dividend of $60,000 was paid during the year.

The Beaver Auxiliary property was not worked during the year.

In the Kirkland Lake district the company exercised its option on the stock of the Kirkland Lake Gold Mining Company, which own 362 acres in that section. Work was confined to the McKane claim. The shaft was continued to the 500-foot level, and levels opened up at 100, 200, 300, 400 and 500 feet, and $350,000 worth of ore put in sight. Following is a summary of the development:

Drifting	916.0	feet.
Cross-cutting	617.5	"
Shaft sinking	410.0	"
Total	1,943.5	"
Station cutting	149.0	cubic yards.
Sump cutting	95.0	" "
Total	244.0	" "

A 125-h.p. boiler, 10-drill compressor and hoist have been installed in addition to the original plant.

Buffalo.—The following information is taken from the eleventh annual report of the Buffalo Mines, Limited, covering operations for the year ending April 30th, 1917.

The work performed underground was as follows:—

——	Raising	Drifting	Stoping
1st level	60 feet	1,150 feet	120,800 cu. ft.
2nd level	90 "	455 "	76,000 "
3rd level	90 "	75 "	27,100 "
Totals	240 feet	1,680 feet	223,900 cu. ft.

Totals to date are:

Shaft sinking	2,249 feet.
Drifting	20,166 "
Stoping	2,881,442 cu. ft.

During the year total ore tonnage broken was 25,258, of which 3,108 tons was waste rock used for filling. Of the balance 14,452 tons was hoisted to the mill, and 7,698 tons was added to reserves of broken ore in the stopes.

The mill treated 14,452 tons from the mine by combination concentration and oil flotation, and 35,507 tons of sand tailings by flotation methods. There were recovered in jig and table concentrates 207,174 ozs. silver and in flotation concentrates 117,462 ozs. making a total of 324,636 ozs.

The cyanide plant treated 3,038 tons of slimes and middlings from concentrator and flotation plant, with a recovery of 32,383 ozs. The tailings from cyanide plant were then treated by flotation and a further recovery made of 4,706 ozs.: total 37,089 ozs.

The total production of silver for the year from all processes, including concentrate on hand and at smelters, amounted to 394,587 ozs.

Only a portion of the concentrates produced by oil flotation have been treated and turned into bullion. The delay in the completion of the Holt-Dern installation for roasting these concentrates and the erection of a leaching plant, caused a large accumulation of flotation concentrates at the high-grade plant awaiting treatment.

Mention is made elsewhere in this report of the Holt-Dern roasting furnace.

There yet remain to be treated approximately 275,000 tons of sand tailings, containing 1,400,000 ozs. also 3,000 tons residues at the high-grade plant.

The officers and directors are: President, Charles L. Denison, New York, N.Y.; vice-president, Robt. W. Pomeroy, Buffalo, N.Y.; 2nd vice-president, Harland B. Crandall, New York; secretary and treasurer, George C. Miller, Buffalo; director, Albert W. Johnston, New York.

Mr. Tom R. Jones, Cobalt, is general superintendent.

Calumet and Montana.—Work by the Calumet and Montana Consolidated Mining Company, Limited, was commenced in September, 1915, on the property in Coleman township known as the Cyril Lake or Airgoid. This claim adjoins the Dominion mine, formerly known as the Nova Scotia mine, owned by the Dominion Reduction company.

Work during 1916 was devoted entirely to development above the 90-foot level. The shaft is 225 feet deep with first level at 50 feet and second at 90 feet. On the date of last inspection, February 23rd, 1917, the heading on the east drift, 1st level was at 146 feet, and the north drift on 2nd level had reached 352 feet.

Nine men were employed under superintendent J. S. Clarke, of Cobalt.

The officers of the company are: President, H. O. Oswald, Minneapolis, Minn.; secretary-treasurer, Charles Bilby, Toronto; directors, C. V. Patterson, St. Paul; W. W. Sloan, Toronto; W. G. Weichel, M.P., Waterloo, Ont.; and manager G. G. Thomas, Box 227, Cobalt.

Casey-Cobalt.—The Casey-Cobalt Silver Mining Company, Limited, continued active development and production at its mine in Casey township, up to the disastrous bush fire August 22nd, 1916, which completely destroyed the surface plant, buildings and equipment. The remainder of the year was spent in rebuilding, and the management had to face the largely increased cost of material and the slow deliveries due to war conditions.

Considerable exploration and development has been done on this property. There are six shafts as follows:

No. 1—242 feet deep, plus 50 foot winze.
No. 2—test pit only.
No. 3—282 feet deep.
No. 4—147 feet deep.
No. 5—50 feet deep.
No. 6—371 feet deep, plus 50 foot winze.

With the exception of 600 feet of diamond-drilling in No. 3 workings, all work during 1916 was done at No. 6 shaft. At No. 6 the following progress was made before the fire.

Stoping	111,852 cu. ft.
Drifting	1,183 feet.
Cross-cutting	912 "
Winzes	29 "
Raises	69 "
Diamond-drilling on third level	163 "

Ninety-five men were employed up to August 22nd. 1916.

The officers of the company are: President, W. R. P. Parker; vice-president, J. P. Watson; secretary, W. W. Perry; all of Toronto. The head office is at 1514 Traders Bank Building, Toronto. John W. Shaw, New Liskeard, is manager, and William Hooper, mine foreman.

Casey Mountain.—The Casey Mountain Mining Company, Limited, continued work in 1916 on the company's claim on lot 6, in the second concession, township of Casey. The operations were conducted by a syndicate of western men closely identified with the original company. During 1916, No. 2 shaft was sunk 150 feet, and on the date of inspection June 29th, 1917, had reached a depth of 345 feet, with 90 feet of drifting to the west on the 50-foot level, 10 feet on the 100-foot level, 35 feet on the 135-foot level, and on the bottom level at 345 feet two drifts were in progress. One heading to the southwest was in 75 feet, and the second drift running directly west of the shaft was in 25 feet. No. 1 shaft was abandoned during the year.

The officers of the operating syndicate are:—President, J. D. Martin, Regina; vice-president, H. M. Richardson, Ft. Qu'Appelle; secretary-treasurer, A. J. Cameron, Regina; directors, Geo. Speers, Regina; A. Cunningham, Moose Jaw; and manager, R. G. Williamson, Judge P.O., Ont.

The Toronto office is 115 Stair Building, Toronto, and Wm. A. Staples is secretary-treasurer of the Casey Mountain Mining Company, with R. G. Williamson president, and James Thompson, M.P.P., Havelock, vice-president.

Casey-Seneca Silver Mines, Limited.—The Casey-Seneca Silver Mines, Limited, continued work on the property in lot 6, concession VI, Casey township, until August, 1916, when all the surface equipment was destroyed by fire. The underground work was confined to prospecting on the 345-foot level. J. N. MacGuire was in charge of the work.

The officers of the company are: S. Harvey Worth, president; W. E. Segsworth, managing director: R. F. Segsworth, secretary-treasurer; A. C. Bailey, mine manager. The head office is at 103 Bay St., Toronto.

Cochrane.—The Crown Reserve Mining Company, Limited, began work at the Cochrane mine on June 15th, 1916. At the close of the year the shaft had been sunk from the 200-foot level to 570 feet, with stations at 100, 200, 300 and 550 feet. On the bottom level drifts were run north 100 feet and south 60 feet.

H. J. Stewart is manager, and Charles Froats superintendent, employing 14 men.

Coniagas.—The Coniagas Mines, Limited, has an authorized capitalization of 800,000 shares of a par value of $5.

The Board of directors are: R. W. Leonard, president and general manager; Alex. Longwell, vice-president; R. P. Rogers, F. J. Bishop, W. D. Woodruff, J. J. Mackan, secretary-treasurer; F. D. Reid, superintendent.

During the year a little over one million and three-quarters ounces of silver were mined and shipped, bringing the total production of this mine to 24,000,000 ounces. Two dividends of $200,000 each were paid, making the dividend record $8,440,000.

The yearly production of silver from the beginning has been as follows:—

Year Nov. 1 to Oct. 31	Tons	Mine Ore Ozs.	Tons	Concentrates Ozs.	Tons	Total Ozs.
1905–06	289.0	657,513.00	.....	.....	289.0	657,513.00
1906–07	2,655.0	1,341,372.00	.....	.....	2,655.0	1,341,372.00
1907–08	Mine ore	and concentra tes			627.5	1,457,240.00
1908–09	350.0	807,313.00	426.0	599,975.00	776.0	1,407,288.00
1909–10	330.1	979,630.00	645.5	949,901.00	975.6	1,929,531.00
1910–11	619.1	2,142,961.71	1,418.4	1,646,312.20	2,037.5	3,789,273.91
1911–12	650.0	1,944,212.80	1,287.5	1,564,164.47	1,937.5	3,508,377.27
1912–13	735.8	2,249,394.32	1,034.3	1,323,004.56	1,770.1	3,572,398.88
1913–14	492.9	1,451,522.27	748.2	1,045,872.41	1,241.1	2,497,394.68
1914–15	274.0	940,432.59	629.7	1,061,620.91	903.7	2,002,053.50
1915–16	193.2	522,908.28	647.9	1,250,378.56	841.1	1,773,286.84
Totals	6,589.1	13,037,259.97	6,837.5	9,441,229.11	14,054.1	23,935,729.08

Statistics of mine development are:—

—	Total to Oct. 31, 1916	Total to Oct. 31, 1915	Work During 1915–16
Shaft Sinking, feet	875	875	.....
Drifting, feet	17,611	16,608	1,003
Cross-cutting, feet	9,527	8,715	812
Winzing, feet	632	536	96
Raising, feet	1,067	1,004	63
Totals	29,712	27,738	1,974

During the year 56,972 tons of ore were milled.

Exploration work on the Agaunico property was stopped during the year. Options were taken on two gold properties in the Porcupine district.

The Coniagas Mines, Limited, owns 6,054 shares of the Wabi Iron Works, Limited, at New Liskeard, which has a capitalization of 40,000 shares of a par value of $1.

The company also own 2,494 shares of the authorized issue of 2,500 shares of the Coniagas Reduction Company. These shares have a par value of $100.

The Redington Rock Drill Company has an authorized capital of 1,000 shares of $100 par value; 220 shares have been issued of which the Coniagas Mines, Limited, own 117. As the entire operations of this company are confined to supplying the Coniagas Mines, Limited, it has been decided to wind up the company, and the mine will operate the plant and equipment.

Crown Reserve.—The Crown Reserve Mining Company, Limited, has an authorized capital of 2,000,000 shares of a par value of $1. The officers and directors are the same as for the Porcupine-Crown Mines, Limited. S. W. Cohen is general manager.

During the year 1916, 274,470 ounces of silver were produced, bringing the total production of the mine to 19,361,006 ounces.

Development work during the year amounted to 500 feet of sinking and raising, 2,000 feet of drifting and 700 feet of cross-cutting. The total development to date amounts to 32,786 feet.

The Crown Reserve Mining Company has a one-half interest in the Drummond Fraction; 40,450 ounces were produced from this property during the year.

About 1,000 feet of development was done on the Silver Leaf lease, principally on the 200-foot level.

The option on the Globe property in California was given up. An option was taken on some properties in Boston Creek, but was dropped after some months' work. A joint option was taken with the Dominion Reduction Company, Limited, on the Cochrane mine in Cobalt, adjoining the Timiskaming on the south, and the development of this property is now being actively carried on.

The Crown Reserve Company also owns about 90 per cent. of the stock of the Reward mine in California, and 60 per cent. of the capital stock of the Porcupine-Crown Mines, Limited.

Dickson Creek.—The Dickson Creek Mining Company, Limited, began work in June, 1915, on its claims on lots 9 and 10, concession V, township of Bucke, two and one-half miles north of Haileybury.

A shaft was started in October, 1916, and on the date of inspection, February 22nd, 1917, had reached a depth of 130 feet, on an inclination of 77° from the horizon. The plant consists of one upright 25 h.p. boiler, one Ingersoll-Rand compressor 500 feet capacity, and one 6 by 8 Jenckes hoist.

The shaft is in conglomerate from the surface and will be continued to the diabase contact.

The officers of the company are: President, Henry Higgins, London, England; director, Walter Eveling, London, England. H. Hollands-Hurst is manager, employing six men.

Dominion Reduction.—The Dominion Reduction Company operated its 40-stamp customs mill near Cobalt throughout the year. The ore treated came chiefly from the Crown Reserve and Kerr Lake mines, with small tonnages from the Chambers-Ferland and Cobalt Comet.

During the year 68,611 tons of ore were milled, having an average silver content per ton of 24.63 ozs. or a total silver content of 1,689,935 ozs. The milling capacity was increased by the installation of two 3-cell and two 2-cell Callow pneumatic flotation units. One Holt-Dern furnace for roasting flotation concentrates was also installed, with the necessary tanks for subsequent leaching and cyaniding of same.

It is the intention of the management to extend the plant to accept all kinds of concentrates for treatment.

The officers of the company are: President, D. M. Steindler, New York; vice-president, Sir Mortimer B. Davis, Montreal; general manager and secretary, Eugene L. Steindler, Cobalt; assistant manager, P. L. Blodgett, Cobalt.

Dominion.—Operations were resumed at the Dominion mine, formerly known as the Nova Scotia, in October, 1916. This mine has been closed since 1912, and the present owners, the Dominion Reduction Company, de-watered the workings at the main shaft, and did a small amount of stoping on the Bilsky vein (No. 4) also 40 feet of drifting. No. 2 shaft, which is 50 feet deep, was de-watered in June, 1917, and work resumed. These workings are not connected with the main shaft. No. 3 shaft near the office is 75 feet deep, and the main shaft 250 feet.

The officers are the same as given for the Dominion Reduction Company. Twelve men are employed.

Genesee.—The Genesee Mining Company, Limited, was organized in August, 1915, and a six-year lease taken from the United States Cobalt Mining Company, of the southwest quarter of south half of lot 9, concession I, township of Bucke.

On the date of inspection, February 17th, 1917, the shaft had reached a depth of 363 feet, and a station cut at the 350-foot level. The north drift at the 50-foot level had been abandoned, and a drift commenced to the west from the 350-foot station. This was later abandoned, and sinking resumed. Eight men were employed.

The directors of the company are: President, Ralph H. Gorsline, Rochester, N.Y.; secretary-treasurer, Alex. Russell, Rochester, N.Y.; A. A. Amos, Toronto, Ontario; manager, Leonard F. Steenman, Cobalt, Ontario.

Glen Lake.—The Glen Lake Mines, Limited, operated the Foster mine under lease from the Foster-Cobalt Mining Company, Limited. A cross-cut 1,600 feet in length was driven northeast from the shaft under Glen lake, and near the face of the cross-cut a winze was sunk to a depth of 60 feet. At this level drifts were run to the east 100 feet and to the west 50 feet. Work was discontinued in July, 1916.

The officers of the company are: President, C. B. Flynn, New York; secretary-treasurer, M. P. Van der Voort, 13 Wellington Street East, Toronto; manager and assistant treasurer, Thos. J. Flynn, Haileybury.

Hargrave.—The Hargrave Silver Mines, Limited, began operations at its mine in Coleman township adjoining the Drummond mine, November 15th, 1916.

No underground work was attempted until January 15th, 1917, and the period from November 15th to the close of the year was occupied in de-watering the mine and shipping mill rock from the dump. Four hundred tons of this material was hauled to the Dominion Reduction Customs mill.

The officers of the company are: President, George H. Sedgwick, Toronto; secretary-treasurer, James Aitchison, Toronto; manager, J. T. Shaw, Cobalt. Twenty-seven men are employed.

Hudson Bay.—The Hudson Bay Mines, Limited, closed No. 2 mine in March, 1916, and in June, 1916, re-opened No. 1 workings adjoining the Trethewey.

The total development work done at No. 1 mine to the close of the year was as follows: Drifting, 275.5 feet; cross-cutting 450 feet; raising, 199.2 feet. Ten thousand and ninety-nine tons of ore were broken in the stopes. In October, 1916, two new veins were discovered on the surface to the north and west of the shaft, and subsequent development proved them to be of considerable length and value.

The mill was repaired and altered, and operations were resumed in September. To the close of the year, a total of 5,021.6 tons of ore was milled.

On January 1st, 1917, Douglas Mutch was appointed manager, succeeding G. G. Thomas, who had charge of operations during 1916. Underground work is in charge of Robt. McGrath, and 45 men are employed in the mine and mill.

The directors are: President, George Taylor; vice-president, A. A. McKelvie; S. S. Ritchie, T. McCamus, D. M. Ferguson, J. J. Grills, all of New Liskeard; C. L. Sherrill, Buffalo, N.Y.; secretary-treasurer, F. L. Hutchison, New Liskeard.

Kerr Lake.—The Kerr Lake Mining Company of New York, owns all the stock of the Kerr Lake Mining Company, Limited, of Ontario, 150,000 shares of Wettlaufer Lorrain Silver Mines, Limited, 200,000 shares of Kerr Lake Majestic mines, and 837,498 shares of Caribou Cobalt Mines Company's stock.

Development at the Kerr Lake mine, Cobalt, for the fiscal year ending August 31st, 1916, amounted to 4,056.8 feet as follows: drifting 1,975.0 feet; cross-cutting 1,737.3 feet; raising, 189.0 feet; and sinking 155.5 feet. Total stoping 44,008.0 feet, and total side-cutting, 1,189.5 feet. During the year 58,850 tons were hoisted at a mining cost of $3.68 per ton. Of this tonnage 45,743 tons were ore, and 13,107 tons waste. The production amounted to 2,433,793 ounces of silver at a total cost of 25.25 cents per ounce. This cost is made up as follows: mining and developing costs 8.89 cents; shipment and treatment charges 15.80 cents; administration and general cost 0.56 cents. The ore reserves on September 1st, 1916, were estimated to contain 3,827,000 ounces of silver.

Operations were resumed in a small way on the Drummond Fraction property in July.

A De Laval 3-stage, 350-gallon centrifugal pump, electrically driven, was installed at the main shaft on the 225-foot level to handle the total flow of water in the mine.

The officers are: President, Adolph Lewisohn; vice-president, Sam A. Lewisohn; secretary and treasurer, E. H. Westlake, all of 61 Broadway, New York; mine manager, H. S. Kee, Cobalt.

La Rose.—The La Rose Consolidated Mines Company has an authorized capital of 1,500,000 shares of a par value of $5 each.

The officers of the company are: D. Lorne McGibbon, president; Shirley Ogilvie, vice-president; Edwin Hanson, vice-president; Stephen J. Le Huray, secretary-treasurer; G. C. Bateman, general manager. The directors are: D. Lorne McGibbon, Victor E. Mitchell, K.C., Shirley Ogilvie, W. A. Black, Edwin Hanson, W. M. Dobell, E. W. Nesbitt, and S. J. Le Huray; head office, 260 St. James St., Montreal.

During the year 1916 the company's report shows the production of silver to have amounted to 740,065 ounces, the net value of which was $449,734. The cost of production was 46.39 cents per ounce, and the net selling price was 64.89 cents per ounce. The net profit on production was $164,774.04. Dividends paid during the year amounted to $299,725.40, bringing the dividend record of this property up to $7,235,409.56.

The development work during the year was as follows:—

——	Trenches	Drifts	Cross-cuts	Raises	Diamond Drilling	Stopes
	ft.	ft.	ft.	ft.	ft.	cu. yds.
La Rose.....	945	1,294	1,168.5	255	256.4	3,447
Lawson.....	.....	264.5	316.	208	.....	85
	945	1,558.5	1,484.5	463	256.4	3,532

The company did not operate the Princess, Fisher-Eplett and University mines during the year.

The tonnage milled was 54,229, the greater portion of which came from the La Rose dumps. There is a considerable tonnage on the dumps at the Princess and Lawson mines, which will be treated during 1917 if the price of silver remains at its present high level.

Working options were taken on a copper property in New Brunswick, a gold property at Porcupine, and a gold property at Kirkland lake. The first two were allowed to lapse, as development work did not give encouraging results.

Mercer.—The Mercer Silver Mines, Limited, continued operations on the Gould lease on Cart lake until February, 1917, when it was decided to cease operations, development work not having disclosed any new ore bodies.

The officers of the company are: S. H. Worth, president; R. F. Segsworth, secretary-treasurer; W. E. Segsworth, managing director; A. C. Bailey, mine manager. The head office is at 103 Bay St., Toronto.

Mining Corporation of Canada.—The Mining Corporation of Canada, Limited, owns 183½ acres in the Cobalt camp comprising the Cobalt Townsite, Cobalt Lake, City of Cobalt, Townsite Extension and Little Nipissing mines. The Cobalt Reduction Company, Limited, is also controlled by the corporation. The company is capitalized at $2,075,000 in shares of $1.00 each, all issued.

The directors and officers of the company are: Sir Henry M. Pellatt, president; J. P. Watson, first vice-president; W. R. P. Parker, second vice-president;

G. M. Clark, Lieut. J. G. Watson, D'Arcy Weatherbe, Capt. R. E. G. Van Cutsem; D'Arcy Weatherbe, consulting engineer: C. E. Watson, resident manager; M. F. Fairlie, superintendent of reduction works. The head office is at 1512-1520 Traders Bank Building, Toronto.

The following information is taken from the annual report of the company:

The production for the year 1916 was 4,457,440.80 ounces of silver, as compared with 4,563,957 ounces for the year 1915; and the net profits for the year 1916 amounted to $1,895,583.88, as compared with $1,193,395.44 for the preceding year.

During the year the amount of exploration and development work amounted to 14,789 feet.

The total tonnage treated was 114,392.13 tons, as against 131,852.24 tons for 1915, the total ounces recovered being 4,457,440.80, of which 1,464,161.74 ounces were from high-grade ore. The percentage of recovery was 92.14 per cent. in 1916, as against 90.72 per cent. in 1915.

Ore and Waste Rock.—The quantity of ore broken amounted to 68,645 tons, and 101,271 tons were hoisted from the mine.

Waste rock, amounting to 53,799 tons, was broken in the mine, of which 41,554 tons were hoisted and 12,245 tons were deposited in old stopes underground.

Of the total ore tonnage hoisted from the mine, 556.3 tons of high-grade were sent to smelters, 206.7 tons of high-grade were treated in the new high-grade plant of the Cobalt Reduction Company, while 99,480 tons were concentrated and 1,028 tons were placed on the ore dump.

The average silver production from total ore treated, including all high-grade and other classes of shipping ore and milling ore, was 38.966 ounces per ton, against 34.34 ounces per ton in 1915. The total production from these mines since their inception amounted to 23,129,040 fine ounces at December 31st, 1916.

Cobalt Lake Mill.—On account of improvements in the Cobalt Reduction Company's mill, the Lake mill was shut down on June 11th, 1916. There were no abnormal delays up to the date of the final shut-down.

Cobalt Reduction Company's Concentrating Mill.—This mill ran continuously (excepting holidays) during the year.

Townsite.—Very little exploration work was done on this property in 1916, but a considerable amount of ore, in excess of that contained in the previous year's reserves, was exposed by development work and in cleaning out old stopes previously considered to have been exhausted.

The ore reserve estimate of the resident engineer shows that, although a production of nearly one and three-quarter million ounces has been made during the year from this property, there still remain, available for extraction, 763,700 ounces.

Cobalt Lake.—Extraction was completed from those ore shoots, discovered in 1915 on the Fault Vein, early in the year, but exploration in the upper levels of the old workings near the lake bottom encountered several small patches of very rich ore which have substantially increased the silver production from the Lake property over the amount of the ore reserves developed at the end of 1915.

With the exception of development work still in progress on one of these patches, at the conclusion of 1916, the old southern workings of the Lake mine may for the present be considered as virtually abandoned.

The elaborate exploration programme, instituted in 1915, to prospect the central and northern portion of the Lake property, was very actively prosecuted during 1916.

The portion of this work completed during the past year consisted in driving a long, straight cross-cut (No. 24) up the centre of the Lake property on the 450-foot level. From this central cross-cut, branch cross-cuts, at intervals of about 200 feet, were turned off to right and left, those to the south-east being extended towards the lake fault, while those on the opposite side, in most cases, intersected the Keewatin formation.

Cross-cut No. 24 was extended to a point slightly beyond the prolongation of the strike of vein No. 24 (on the City property) and at a short distance south of this face branch cross-cuts were driven, one south-east to the fault vein, and the other (No. 41) northerly to connect with a winze (No. 4) from the No. 24 vein system workings, which was sunk on the Extension property. From the end of the first of these two cross-cuts long drifts were driven northerly and southerly on the fault vein, but, with the exception of a small patch of ore in cross-cut No. 39, no new discoveries were made in any of these workings on the Lake.

Simultaneously with this work on the Lake, extensions of the workings on the 24 Vein system on the City reached the Extension and Lake properties, and the somewhat unexpected conditions developed by this work, which is described in detail below, now indicate the probability that most of this northerly exploration work on the Lake is on a horizon too high for ore deposition.

The rock on the east side of the great "West" fault revealed by the work from the City property, above mentioned, has evidently suffered a downthrow of over 100 feet, and it is in this deep ground on the Lake that further hopes are centred. Winzes to prospect this area will now be sunk with the greatest speed.

City and Extension.—The work on the City property has chiefly been confined to the north-eastern portion of the property, where drifts on branch veins, off veins Nos. 24 and 29, have developed a new network of veins which, though in no individual case averaging as well in grade as the ore in Nos. 24, 27, or 29, have provided, and are still providing, large quantities of good milling ore, and in some cases rich, high-grade ore.

Vein No. 29 was followed southerly for several hundred feet from its junction with No. 24 vein, and has proved to be one of the best producers on the combined properties.

The drift on the 300-foot level, on vein No. 24, which was continued easterly through the top of the ore shoot on that vein, reached the Lake property towards the middle of the year, and near the western boundary of the Extension property passed through a great fault with a northerly and southerly strike and a flat dip towards the east. Subsidiary and parallel faulting also occurs with the main fault, the whole line of dislocation roughly paralleling the direction of the Extension property in this region.

Subsequent development work has identified this fault with the great *West* fissure, which has been explored and intersects several of the properties to the north of the City and Extension.

By analogy with neighbouring development work, and as indicated by our own work, the area on the east side of this fault appears, as stated above, to have been thrown down vertically over one hundred feet.

On the Extension property, in the drift in continuation of Vein No. 24, a winze has been sunk to the Keewatin formation, and a connection made with the Lake workings on the 450-foot level, through cross-cut No. 41. Near the junction of this cross-cut with winze No. 4 a strong vein carrying smaltite was intersected in the Keewatin, which, being followed upwards through the contact into the conglomerate formation, has increased in size and produced richer ore than was ever before exposed in any portion of the workings. The vein in some places exceeded six inches in thickness, and some of the ore would assay over 15,000 ounces per ton.

At a depth of 86 feet in winze No. 4 a station was cut and a cross-cut to the north intersected an extension of this vein west of where first encountered and at a higher point on its pitch. Further development has practically proved this ore to be an extension of the main ore shoot on vein 24, which is now shown to extend continuously from the northern boundary of the City property (where it dies out) to the great West fault—a total distance of over 700 feet. The ore shoot on its eastern extension is, so far as shown by present development work, not so high as at its western end, as it is bounded here on its lower side by the Keewatin formation and, about twenty feet higher up, by a subsidiary fault roughly paralleling the contact.

Winze No. 4 has also been connected on the 386-foot level by a long cross-cut (No. 8), which runs southerly, down the centre of the Extension property, through the old City workings, and connecting with the main (No. 7) hoisting shaft. All the ore from these northern workings will be carried through this haulage way, which should effect a material economy in cost and increase in capacity. In this cross-cut, No. 8, two veins, Nos. 39 and 40, have been cut and show silver contents. The cross-cut north from winze No. 4 on the 386-foot level will be further extended in that direction to prospect the Extension property on that horizon and on the west side of the West fault.

Little Nipissing.—Exploration continued on this property, and during the latter part of the year was confined to work on the Lake fault, which extends southerly through the claim. In a drift on the fault, patches of ore carrying a large percentage of cobalt and assaying in places over 1,000 ounces per ton, were encountered. As this ore chiefly occurs near the bottom of the drift, a winze will be sunk on the fault to the Keewatin contact, and drifts will be run southerly in the hope of intersecting an ore shoot.

Details of Mining Work and Labour.—The following summarized tables give details of work accomplished in the various operations at the mine:

FOOTAGES IN 1916

—	Lineal feet of working place advanced					Cubic Feet Stoping
	Driven	Crosscut	Sunk	Raised	Total	
Ore Extraction	.....	.....	.....	39	39	753,727
Development	2,148	.....	18	257	2,423	.....
Exploration	2,213	9,301	274	578	12,366	.....
Total	4,361	9,301	292	874	14,828	753,727

Diamond drilling amounted to 985 feet, of which 576 feet were from the surface and 409 feet from underground. The total footage of drifts, cross-cuts, raises, winzes and shafts in the workings of the Mining Corporation properties amounted to an aggregate of over 19 miles at the end of 1916.

SUMMARY OF ORE RESERVES

—	Tons Ore 1916	Ounces Silver 1916
High-grade ore	743.7	1,729,800
Milling ore	64,008.0	1,505,200
Total	64,751.7	3,235,000

The total amount is made up of 21,092 tons, carrying 1,688,125 ounces, in place, and 43,503 tons, carrying 1,546,875 ounces, of broken ore in stopes and on the dumps.

McKinley-Darragh.—The McKinley-Darragh-Savage Mines of Cobalt, Limited, has an authorized capital of 2,500,000 shares of a par value of $1. The directors and officers of the company are: J. R. L. Starr, president; Thos. W. Finucane, vice-president; J. H. Spence, secretary; Harper Sibley, treasurer; Joseph S. Hunn, asst. treasurer; H. W. Sibley, G. L. Thompson, T. R. Finucane, manager. The office of the secretary is at 58 Canada Life Building, Toronto.

During the year 1916, 925,779 ounces of silver were recovered, bringing the total to 16,414,346 ounces since the mine was opened in 1906. The average price received for silver during the year was 67.364 cents and the total costs 40.73 cents.

The estimated ore reserves on Jan. 1st, 1917, remain about the same as at the beginning of 1916, being 1,714,302 ounces.

The dividends authorized during the year were four, amounting to $269,723.04.

The tonnage milled during the year amounted to 62,676, silver recovered to 764,167 ounces. A flotation mill was installed for the treatment of mill slimes.

The distribution of the underground work during the year was as follows:—

McKinley

Levels	Shafts feet	Drifts feet	Cross-cuts feet	Stopes tons	Raises feet	Winzes feet	Shaft Stations cubic yards
Surface				1,716			
75 feet		95	113	4,251	141.5		
110 "		373.5	34.5	4,602			
150 "		158	127	5,093	25		
200 "		629.5	165.5	12,469	4.5		
250 "		296	69.5	10,250	283	246.5	41
300 "	3.5	123.5	392.5		20		112
400 "		283	370.5		142		85
Total McKinley.	3.5	1,958.5	1,272.5	38,381	616	246.5	238

Savage

Levels	Shafts feet	Drifts feet	Cross-cuts feet	Stopes tons	Raises feet	Winzes feet	Shaft Stations cubic yards
70 feet		26		263	15	12.5	
85 "				88	11		
88 "				30			
120 "		19.5	13				
140 "		202.5	337	687	18.5	13	
162 "		99.5	36.5	435			
165 "		40	15.5	655	11.5		
190 "		73.5	134	111	66.5	7.5	
210 "				17			
240 "				56			
290 "		24.5		12			
Total, Savage...		485.5	536	2,354	122.5	33	
Combined Total.	3.5	2,444	1,808.5	40,735	738.5	279.5	238

National.—The National Mines, Limited, began work April 1st, 1916, on the King Edward claim west of Cross lake. The property was last worked by the York Ontario Silver Mines, Limited, which held a lease from the King Edward Silver Mines, Limited. This lease has been acquired by the National Mines, Limited.

The winze has been sunk to a depth of 840 feet below the tunnel level, or 1,000 feet below surface. A cross-cut was run at this level, a distance of 185 feet from the winze, north 68° east.

On the date of last inspection, May 28th, 1917, a drift 870 feet in length had been driven north 20° west from the winze, in the general direction of the old Silver Cliff workings.

During the year, in addition to the above work underground, the mill was repaired and equipped with one triple cell Callow rougher and two single cell cleaners, and sand tailings from Cross lake treated by flotation.

The officers of the company are: President, H. E. Jackman; secretary-treasurer, Ernest C. Whitbeck, both of 17 Ellwood Building, Rochester, N.Y.; director, S. Jardine, Toronto; and C. A. Filteau, manager, box 749, Cobalt.

Underground work was in charge of J. N. McGuire, Cobalt, on contract. Twenty-five men were employed in the mine and mill.

Nipissing.—The Nipissing Mining Company has an authorized and issued capital of 2,500 shares of a par value of $100. The officers of the company are: David Fasken, president: E. P. Earle, vice-president; Arch. T. Struthers, secretary; P. C. Pfeiffer, treasurer. The directors are: W. H. Brouse, David Fasken, E. P. Earle, Richard T. Greene, R. B. Watson. The operating officials are: R. B. Watson, general manager; Chas. Butters, consulting metallurgical engineer; Hugh Park, manager; Jas. Johnson, mill manager; Jas. J. Denny, manager research department. The head office of the company is at the Excelsior Life Building, Toronto.

The stock of the Nipissing Mining Company is held by the Nipissing Mines Company, with an authorized and issued capital of 1,200,000 shares of a par value of $5. The officers of the company are: E. P. Earle, president; Richard T. Greene, secretary; P. C. Pfeiffer, treasurer. The directors are: W. H. Brouse, Richard T. Greene, E. P. Earle, August Heckscher, David Fasken, and R. B. Watson. The head office of the company is at 165 Broadway, New York.

The following information is taken from the annual report of the company for the year 1916:

The average price received for silver during the year was 68.79 cents per oz.

The total dividends paid to Jan. 20th, 1917, amounted to $15,540,000, or 259 per cent. of the capitalization.

The production of fine silver was 4,044,668.49 ounces, the gross value being $3,027,668.63. Production costs were $976,185.70. The net result was $2,051,482.93.

The surplus was increased $193,865.94, and now stands at $1,980,126.87.

Stockholders received during the year $1,800,000, as against $1,200,000 during the previous year.

The known ore reserves contain 9,153,139 ounces of silver, compared with 8,921,718 ounces the previous year. The value of the silver in the ore reserves is largely in excess of the value a year ago, by reason of the advance of approximately 27 cents per ounce in the price of silver.

Underground work done in 1916 is summarized as follows:—

Shaft No.	Drifting feet	Cross-cutting feet	Raising feet	Sinking feet	Total feet	Stoping Cubic Yards
14	373.5	801.0	59.5	9.0	1,243.0	306.0
64	52.5	46.0	15.0	.....	113.5	.....
73	1,308.5	662.0	529.5	91.5	2,591.0	9,627.6
80	20.5	1,499.5	17.0	200.5	1,737.5	1,474.7
81	1,327.0	457.5	10.5	470.0	2,265.0	.....
96	570.0	350.5	87.5	170.0	1,178.5	.....
123	.....	.....	.....	.....	.....	197.4
Total	3,652.0	3,816.5	719.0	941.0	9,128.5	11,605.7

Diamond Drilling (all underground at shafts 73 and 80)....429.5 feet.

Reserves of developed and partly developed ore at 31st December, 1916 were:—

Shaft No.	High Grade Ore		Mill Ore		
	Tons	Ounces	Tons	Assay	Ounces
64	203	200,403	3,992	20	79,840
73	1,522	2,552,040	61,421	25	1,535,525
490	1,539	1,309,689	20,501	30	615,030
80	115	255,200	3,482	25	87,050
100	21	31,200	821	25	20,525
63	194	467,900	8,370	24.3	203,395
96	79	214,800	2,559	25	63,975
14	.....	.....	179	25	4,475
	3,673	5,031,232	101,325	25.8	2,609,815
Dumps	.....	.....	62,396	24.2	1,512,092
			163,721	25.2	4,121,907

	Tons	Assay	Ounces
High Grade Ore	3,673	1.370.	5,031,232
Mill Ore	163,721	25.2	4,121,907
Total	167,394	55.	9,153,139

Increased costs of labour, supplies, taxes and insurance brought the mining costs up to $12.53 per ton of ore or 24.13 cents per oz. of silver, compared with $10.02 per ton and 19.06 cents per oz. in the previous year.

Owing to the high price of silver throughout the year, the net profits were $610,000 more than in 1915 on about the same production.

O'Brien.—The development work done at the O'Brien during 1916 was as follows:—

Drifting and cross-cutting 5,500 feet; raising, 240 feet; sinking, 117 feet; total, 5,857 feet. A new level was established at 610 feet, and stoping done mostly in the vicinity of No. 7 and No. 16 shafts.

Milling operations were carried on with no change of plant. Sodium sulphide precipitation replaced aluminium dust precipitation in the cyanide plant. Aluminium dust has risen to a prohibitive price, and the present process is much cheaper.

Work was continued throughout the year on claim A 1 on the Gillies limit, but nothing of interest was encountered.

M. J. O'Brien is owner of the mine, and J. G. Dickenson, manager.

Penn-Canadian.—The Penn-Canadian Mines, Limited, operated continuously during 1916.

For the year ending April 30th, 1917, the development work done was as follows:—

——	Drifting	Cross-cutting	Raising	Winze sinking	Totals
1st Level.....	192.2	107.8	.....	.....	300.0
3rd Level.....	4.0	.....	30.1	.....	34.1
4th Level.....	46.9	292.6	43.1	.....	382.6
5th Level.....	388.3	108.7	.....	7.0	504.0
6th Level.....	804.8	320.3	144.0	18.2	1,287.3
Total.....	1,436.2	829.4	217.2	25.2	2,508.0

No change has been made in the mill since the 1915 report.

The officers of the company are: President, William J. Haines, Philadelphia; directors: Spencer D. Wright, Philadelphia; Robt. B. Haines, Jr., Philadelphia; Jansen D. Haines, Des Moines, Ia.; Elliott C. P. Laidlaw, New York.

Balmer Neilly, Cobalt, is manager of the company, employing 90 men.

People's.—An agreement was made between the People's Silver Mines, Limited, and the Ophir Cobalt Mines, Limited, whereby each company was to share equally the expense of sinking the People's mine shaft, formerly known as the John Black, from the 300-foot level to the Keewatin-diabase contact, also the cost of drifting to the Ophir boundary. From this point each company assumes its own costs underground, and divides the hoisting, surface and overhead expenses in proportion to the number of machines working. In this manner the properties of both companies will be developed.

During the year the shaft was sunk to the 400-foot level, and 415 feet of drifting and cross-cutting performed. The underground work has been done by contract, under the direction of W. J. Donaldson.

Balmer Neilly is consulting engineer for the two companies. Ten men were employed.

The officers of the People's company are as follows: President, G. B. Bithell, 773 St. Lawrence Boulevard, Montreal; vice-president, James Robertson, Millerton, N.B.; secretary-treasurer, T. Jones, 773 St. Lawrence Boulevard, Montreal.

Peterson Lake.—The Peterson Lake Silver Cobalt Mining Company, Limited, has an authorized capital of $3,000,000. The directors of the company are: Col. Sir Henry Pellatt, president; S. G. Forst, managing director; Max. B. Berg, Irving L. Ernst, Chas. M. Nickel, W. A. Lamport, secretary-treasurer. The head office is at 909 Excelsior Life Building, Toronto.

During the year $126,095.55 was paid in dividends. None of the company's property is now under lease. The Nova Scotia section was worked for part of the year. In April, 1917, work was commenced on the Susquehanna section at the extreme northeast end of the lake.

Development work for the year footed up as follows:—

——	Cross-cutting	Drifting	Sinking	Raising	Stoping
Mercer Lease.....	825	281	.....	.....	.....
Reliance.....	98	207	43	.....	.....
Peterson Lake—Nova Scotia Section...	653	834	14	134	467

Prince-Davis.—In March, 1917, the Prince-Davis Mining Company, Limited, began exploration of the Prince lot in southeast Coleman. Operations were carried on through the Lumsden shaft, and a station cut at the 250-foot level. From the station a drift was run 75 feet, then a cross-cut 295 feet to the Prince line through the Lumsden in a southeasterly direction. This was continued into the Prince ground, and the lot thoroughly prospected.

Underground work is in charge of W. J. Donaldson, and Balmer Neilly is consulting engineer for the company. Messrs. Gordon and Robert Cameron have the contract for drifting and cross-cutting, employing 8 men.

Right-of-Way.—The Right-of-Way Mines, Limited, continued development work during 1916. On March 15th No. 3 shaft was closed and work for the balance of the year confined to No. 2 shaft, near the north end of Cobalt lake. The following development work was done at No. 2 shaft:—

Sinking	62 feet.
Raising	75 "
Drifting	210 "
Cross-cutting	80 "

Work on the Cobalt Lake fault below the 365-foot level has not yet produced any ore, but the work will be continued during 1917.

The quantity of silver produced in 1916 was as follows:—

Ore shipments containing	148,959.61 ozs.
Ore on hand containing	7,367.57 "
Total	156,327.18 "

The head office of the company is at 46 Elgin Street, Ottawa.

The directors are: President, E. Seybold, vice-president, A. W. Fraser, K.C.; secretary-treasurer, E. A. Larmouth; director, C. Jackson Booth, all of Ottawa.

D. H. Angus, Cobalt, is superintendent.

Rochester.—Work at this mine in southeast Coleman was continued during 1916 by the Trethewey Silver-Cobalt Mining Company, Limited.

Work was carried on from the 300-foot level of the Lumsden shaft. Development consisted of:—

Drifting	836.8 feet.
Cross-cutting	419.5 "
Raising	114.1 "
Sinking	44.5 "

Low silver values were encountered in a number of places and a small amount of stoping done on number 305 vein. Work was abandoned in the spring of 1917. Fifteen men were employed during the year.

H. S. Robinson is superintendent, and Charles A. Froats, mine captain.

Seneca-Superior.—The Seneca-Superior Silver Mines, Limited, ceased operations in June, 1916, the known ore bodies being exhausted, and development work not having disclosed any new ore bodies. The mine has produced over five million ounces of silver in a little over four years.

The officers of the company are: S. H. Worth, president; F. W. Zoller, vice-

president; R. F. Segsworth, treasurer; W. E. Segsworth, managing director; R. H. Lyman, manager. The head office is at 103 Bay St., Toronto.

Shamrock.—The Shamrock Consolidated Mines, Limited, continued to develop its property during 1916. The claim owned by this company adjoins the Beaver mine on the north.

The mine was shut down on March 22nd, 1916, and only a small amount of work was done till June 19th, 1916, when it was again opened and worked continuously till the close of the year. The shaft is 417 feet deep with levels at 100, 200, 300 and 400 feet. All work during the year was confined to drifting on third and fourth levels. No ore was shipped.

J. B. Cleveland, Cobalt, is manager of the company, and H. S. Anderson, 93 Queen St., East, Toronto, secretary.

Underground work is in charge of Walter Purdy, employing ten men.

Temiskaming.—The Temiskaming Mining Company, Limited, has an authorized capital of 2,500,000 shares of a par value of $1. The officers of the company are: Frank L. Culver, president and general manager; W. T. Mason, vice-president; H. E. Tremain, treasurer; R. Graham, secretary. The directors are: J. H. Black, F. L. Culver, F. L. Lovelace, W. T. Mason, W. E. Stevenson, H. E. Tremain, F. C. Finkenstaedt. The head office is in the Lumsden Building, Toronto.

The company are interested directly or indirectly in the following properties:—

Daigle Claim: S. ½ of N.W. ¼ of N. ½, lot 1, con. 3, Coleman township, 20 acres.

Gans Property: W. ½ of S.W. ¼ of N. ½, lot 1, con. 3, Coleman.

McDonald Claims: E. and W. halves of S.W. ¼ of S. ½, lot 2, con. 4, Coleman township, 40 acres. Gillies Siding.

Peterson Claim: N.W. ¼ of S. ½, lot 13, con. 2, Bucke township, 40 acres.

Osland Claim: S.W. ¼, N. ½, lot 8, con. 3, Bucke township, 40 acres.

McCool Township: N.W. ¼, N. ½, lot 2, con. 2, 40 acres.

Cook Township: N.E. ¼ of S. ½, lot 1, con. 4, 40 acres.

Barnet Township: N.W. ¼ of S. ½, lot 12, con. 4, 40 acres.

Morrison Claims: Part of W. ½ of S.E. ¼ of S. ½, and part of E. ½ of S.W. ¼ of S. ½, of lot 8, con. 4, Coleman; also part of W. ½ of N.W. ¼ of N. ½, lot 7, con. 4, Coleman township. These three claims are commonly known as the Red Jacket claims.

J. Macdonald Claim: E. ½ of N.W. ¼ of N. ½, lot 10, con. 3, Coleman township.

North Dome: Properties are known as Claims Nos. 13197, 13198, 13199, Porcupine Mining Division.

During the year 1916 the production from the Temiskaming mine, Cobalt, was 1,263,848 ounces of silver, of which 630,417 ounces were from high-grade ore, 333,431 ounces from mill ore. The cost of production was 26.4 cents per ounce.

The main shaft was sunk 608 feet, making a total depth of 1,469 feet. The development underground was as follows:—

Drifting	2,292.7	feet.
Cross-cutting	915.9	"
Sinking	608.0	"
Raising	1,384.3	"
Station-cutting	42.0	"
Total	5,242.9	"
Stoping	11,508.2	cubic yards.

Three dividends of $75,000 each were paid during the year.

Trethewey.—The mine of the Trethewey Silver-Cobalt Mining Company, Limited, was reopened and milling resumed June 1st, 1916, following the improved market conditions of the early months of 1916. Operations were continuous for the balance of the year.

Development for this period was 1,034 feet, including 264 feet of cross-cutting and raising around No. 6 shaft. A total of 10,129 tons of ore was broken in the stopes, mostly derived from slashing the walls of old stopes.

The mill treated a total of 18,541 tons of ore, averaging 16.3 ozs. of silver per ton. The sand tailings were sampled and measured, and found to total 65,000 tons with an average content of 4.7 ozs. per ton. The method of treating these tailings has not yet been decided.

The Rochester mine owned by the company is described elsewhere in this report.

The company de-watered the Lucky Cross gold mine at Swastika, and did 200 feet of drifting and cross-cutting at the bottom level. Work was started February 26th and discontinued in May.

The new board is as follows: President, S. R. Wickett, Toronto; vice-president, J. B. Tudhope, Orillia; secretary-treasurer, L. J. Pashler, Toronto; and directors, Gordon Taylor, Toronto; J. P. Bickell, Toronto; W. J. Sheppard, Waubaushene, Ont.; T. E. Leather, Hamilton.

The head office is at 1,428 Traders Bank Building, Toronto. H. S. Robinson, Cobalt, is manager.

Northern Customs.—The Northern Customs Concentrators, Limited, at mileage 104, T. and N. O. railway, ran continuously in 1916. The ore treated came from La Rose, Right-of-Way, and Chambers-Ferland mines.

The company recently installed a Callow pneumatic flotation, double compartment, triple length cell, replacing the vanners.

The officers of the company are: President, A. J. Young, 702 Excelsior Life Building, Toronto; vice-president, C. J. Booth, Ottawa; general manager and secretary-treasurer, F. J. Bourne, Cobalt; directors, M. J. O'Brien, Renfrew, and Dr. C. W. Haentschell, Haileybury; A. S. Holmes, Cobalt, is superintendent, employing 50 men.

The Flotation Process at Cobalt

The following notes on flotation in the Cobalt camp were furnished by E. B. Thornhill, representative at Cobalt of the General Engineering Company; Robert E. Dye, mill superintendent of the Buffalo Mines, Limited, Arthur A. Cole and Frank Groch, Cobalt.

It may be definitely stated that flotation has passed through the experimental stage in the Cobalt camp, and is now firmly established as the most economical method of saving the silver values in the Cobalt ores formerly not recovered by gravity methods of concentration.

It cannot be said that flotation practice has replaced standard gravity concentration to the same extent as in the copper-mining camps of the west, but it is particularly adaptable to the recovery of the more friable silver minerals and fine leaf silver, which escape recovery by ordinary gravity concentrating machinery.

The first experimental plant operating on a tonnage scale was built in October, 1915, by Buffalo Mines, Limited, to determine the feasibility of concentrating the silver values in the stacked sand tailings from previous concentrating methods. This experimental plant consisted of a two-compartment standard length Callow rougher cell, and one one-half size Callow cleaner cell.

The results obtained were so satisfactory that the Buffalo Mines, Limited, erected a Callow flotation plant of 600 tons daily capacity to treat its sand tailings. This plant was put in operation in September, 1916.

In June, 1916, the McKinley-Darragh-Savage Mines began operations with a 200-ton Callow installation to treat slimes. This plant has since been increased, and during the summer of 1917 an entirely new tailings mill was erected.

These two initial plants demonstrated on a commercial scale the adaptability of the flotation process to the mill products and low-grade ores of the Cobalt district. At present the following mills use the Callow Pneumatic System of flotation in the Cobalt district:

Buffalo Mines, Limited; McKinley-Darragh-Savage Mines; Nipissing Mines; Coniagas; Dominion Reduction Company; Northern Customs Concentrators, and the National Mines. Of these mentioned, the Coniagas and Dominion Reduction have each added 200 tons daily capacity to their initial installation, and in the new tailings mill of the McKinley the flotation unit will be greatly increased.

Grinding.—It has been found that the economic limit of grinding for flotation appears to be reached when not more than 1 or 2 per cent. is retained on a 100-mesh screen.

Oils Used.—Practically all the plants use an oil mixture consisting of pine oil, coal tar creosote and coal tar. A mixture of 15 per cent. pine oil, 75 per cent. coal tar creosote, and 10 per cent. coal tar is very efficient.

In this connection it might be noted that the greatly increased demands for pine oil, which had to be imported from the Southern States, led to the inevitable results, extremely high price and an adulterated product. Due to these conditions, attempts were made by Tom R. Jones, of Buffalo Mines, to produce a suitable oil from the stumps of the Northern Ontario pine. Some success was attained, and in conjunction with Arthur A Cole, president of the Canadian Mining Institute, the Dominion Government was interested in the matter, and a plan outlined whereby the Mines Branch at Ottawa working with the Forestry Branch would attack the problem, it being considered one of national importance.

Investigations were commenced in July, 1916, by C. S. Parsons, representing the Mines Branch, and R. E. Gilmore, the Forestry Branch, the Forest Products Laboratories at McGill University being utilized for the experiments.

This investigation followed two lines: (1) the production of pine oil in Canada commercially, (2) the finding of a substitute for pine oil in Canada.

Careful experimentation and investigation of plants already established in Canada and producing wood products, led to the conclusion that the establishment of such an interest in Canada would require a large capital outlay, and even under the most careful management an adequate financial return was not assured. Pine oil forms only a small percentage of the total products of distillation, and at present the markets for the other materials produced are very irregular. A company has been formed at Cobalt, and a small plant erected at Cassidy on the T. & N. O. railway south of Cobalt. The work this plant is doing may lead to very important results.

As to a substitute, it was found that several of the hardwood distillation products made good frothing agents, and that two of the best frothing agents were products from hardwood distillation which had hitherto been wasted. These were two of the hardwood creosote oils.

Recently several barrels of this material were shipped to Cobalt, and a test run under commercial conditions was made at the Buffalo mill. The full capacity of the mill was turned over to Messrs. Parsons and Gilmore, and 600 tons per day for a week was treated by flotation, using these oils exclusively. The results were entirely satisfactory and will be published soon jointly by the Mines Branch and Forestry Branch, Ottawa.

Recovery.—Recoveries by flotation are found to vary over a wide range at the different plants, depending on the product going to flotation, the grade of concentrate required, and the experience of the operators. This last factor will be negligible in time, as there will soon be many efficient operators in the district.

The following table gives the value of the heading, tailing and concentrate and the percentage recovery at the McKinley-Darragh-Savage Mines, from mine and mill slime, for the months of December, 1916, and January, 1917. The averages are for quarter-month periods.

Month	Period	Heading	Tailing	Concentrate	Per Cent. Extraction
December	1st	5.36	1.68	220.0	69.19
	2nd	6.56	1.01	206.0	85.02
	3rd	7.10	1.03	289.0	85.80
	4th	7.55	1.15	443.0	84.98
January	1st	6.65	1.17	568.0	82.58
	2nd	7.30	1.20	436.0	83.80
	3rd	5.70	1.00	364.0	82.68
	4th	4.70	0.90	335.0	82.95
Average		6.37	1.14	357.6	82.13

Disposal of Concentrates.—Due to the present excessive marketing charges, it is economical to produce the high-grade concentrate, even at the sacrifice of recovery. With the exception of Buffalo Mines and Dominion Reduction, the companies producing flotation concentrate depend on United States smelters for the disposal of their products, and the schedules are high. A representative schedule stipulates a $12 to $14 treatment charge per ton, and payment on New York quotation of 95 per cent. of the silver content. With silver at present price, 80 cents per ounce, the marketing cost per ton of a 300-ounce concentrate would be approximately as follows:

Silver loss, 5 per cent.—15 ounces at 80 cents	$12 00
Treatment	14 00
Freight	11 32
Bagging and miscellaneous	2 00
Representation at the smelter	50
Total marketing cost for 1 ton of concentrate	$39 82

This excessive charge, equivalent to 20 per cent. of the market value of the product, led to extensive research work by the metallurgists of the district to devise a satisfactory method for the local treatment of such concentrate.

In this connection reference may be made to the paper presented by Robert E. Dye, of Buffalo Mines, Limited, at the 1917 annual meeting of the Canadian Mining Institute. This carefully-written report describes in detail the work done over a long period at the Buffalo mill and the results obtained. These may be summed up as follows: A chloridizing roast, followed by leaching, either with cyanide or an acid-brine solution, has given the best results to date. By this method a 95 to 98 per cent. extraction of the silver values is being obtained.

Roasting Furnace.—The Holt-Dern furnace has been found to offer several advantages over the ordinary reverberatory type. This furnace is simple in construction, and cheap in operation. The standard roasting furnace consists of a rectangular roasting chamber 7 feet by 9 feet by 4½ feet deep, with a hoppered bin under the grates for the discharged product. The fuel for the roast is furnished by the sulphur in the charge, and the roast is maintained by an air blast of 2,000 cubic feet per minute and 12 to 16 ounces pressure per square inch. Products to be roasted, with the requisite amount of salt, additional sulphur (if necessary, in the form of pyritic ore), are all intermittently mixed, and then moistened to the proper degree. Assuming the furnace to be in running order, the cycle of operations is about as follows: With the roasting zone within about two feet below the top of the furnace chamber, the mixed charge, equivalent to about 20 inches of depth, is dropped into the furnace and levelled off. The blast is turned on, and the roasting zone again moves up through the charge at the rate of about one foot an hour. When the roasting zone has again reached the top of the charge, the blast is turned off and the grates shaken until the charge is again lowered about 20 inches. This completes the cycle. The roasted product is withdrawn from the hopper bin underneath the grates and transported to the leaching department.

The use of an acid-brine solution to dissolve out the economic metals, as practised at the Tintic Milling Company, Silver City, Utah, would seem to offer some economy over the use of an acid leach, followed by cyanidation, but this has not yet been demonstrated on a commercial scale on Cobalt concentrates.

The Buffalo Mines has at present (July, 1917) one standard Holt-Dern (7 by 9 feet) ready for operation, and the leaching plant is being erected.

The Dominion Reduction Company installed two Holt-Dern furnaces, each 4½ feet by 4½ feet, inside measurements. These two furnaces will have about two-thirds the roasting capacity of the Buffalo installation, and the plant will be extended to treat custom concentrates.

There are now in the district, Callow Pneumatic installations of 2,350 tons daily capacity, and three Holt-Dern furnaces mentioned above of 21 tons daily capacity of flotation concentrate.

In addition to the Callow Pneumatic installations described above, there are several Groch Centrifugal Flotation machines installed at various mills in the district. This machine is the invention of Frank Groch, of the Grodwards Company, Cobalt, and may briefly be described as follows: The machine consists of a V-shaped box divided into compartments, in each of which operates a specially designed impellor having the combined functions of atomizing the oil, agitating the pulp centrifugally, and sucking the air into the mass during the agitation. The impellor is a vertical hollow shaft, with a contrivance at its lower extremity resembling a duplex centrifugal pump, or a turbine divided horizontally by a disc. The full-sized machine in operation has six impellors, and on the fine slime from Cobalt silver ore has a capacity of 25 tons per day. With fine sand the capacity will be much larger.

In action the pulp enters the first compartment of the V-box at the bottom, is sucked up by the lower portion of the duplex centrifugal impellor, and discharged in such a manner as to cause a tendency for the impellor to be thrust upward, its weight thus being reduced on its bearing and lessening the power consumption.

The oil and air enter the pulp through the impellor, by passing down the hollow shaft and being discharged at the periphery of the impellor, thus being brought into contact with the sulphides of the pulp under conditions for successful flotation. The rest of the operation is very similar to that of any other flotation machine. The oiled sulphides rise to the surface, and flow over the lips of the V-box, while the pulp, thus impoverished, settles and slides down the inclined planes into the first compartment, to be sucked up into the impellor of compartment No. 2, and the operation completed.

The following mills have Groch machine installation: Coniagas, Trethewey, McKinley-Darragh, Northern Customs Concentrator, Beaver, Miller Independence, and the Metals Chemical Company, Welland.

Copper

Mendel.—A small amount of work was done on the Mendel claim, south shore of Portage bay, in September and October, 1916. The vein is said to be four feet wide, carrying good values in chalcopyrite. A shaft was sunk to a depth of 24 feet, and about 50 tons of ore put on the dump. This was cobbed to about 12 tons, said to run 15 per cent. copper.

The work was done by Messrs. Lyman and Marsden, of Cobalt.

Elk Lake Silver Properties

Mapes-Johnston.—The Mapes-Johnston claim near Silver Lake in the township of Mickle, worked with a small force of men during the year. A winze was sunk from the 200- to the 400-foot level, and a drift run northeast on the vein a distance of 115 feet.

The mine closed down in February, 1917. Ten men were employed under superintendent D. G. Oliver.

Kenabeek.—The Kenabeek Consolidated Silver Mines, Limited, began operations in February, 1916, on the south half of lot 2 in the sixth concession of Auld township. A wagon road was built from Kenabeek station on the Elk Lake branch of the T. & N. O. railway a distance of 6 miles to the property.

In July, 1916, the shaft had been sunk to the 126-foot level and 120 feet of drifting and cross-cutting done on the bottom level.

The plant consists of 2 Jenckes locomotive type boilers, 40 h.p. each, and one 4-drill Jenckes compressor.

The officers of the company are: President, Frank Thompson: secretary-treasurer, George Pyke, with head office at 232 St. James Street, Montreal; Capt. W. H. Jeffery is manager, employing 16 men.

Gowganda Silver Mines

Bishop.—The Bishop Silver Mines, Limited, worked continuously throughout the year on claim L.O. 313, situated on the east side of Calcite lake, township of Lawson. When inspected on February 28, 1917, the adit from the foot of the hill on the lake shore had been driven 525 feet, and 500 feet of cross-cutting done at several points in the tunnel. No. 1 winze, 300 feet from the portal is 18 feet deep, and No. 2 winze at the end of the main drift was 90 feet deep. It was the intention of the management to sink this winze to the 100-foot level, and do about 500 feet of cross-cutting and drifting on this level. All the work is in diabase.

The officers of the company are: President, Stuart Lindsley, Orange, N.J.; secretary-treasurer, C. S. McKune, 409 West 55th St., New York, N.Y.; directors, J. H. Bishop, Wyandotte, Mich.; Joseph Tyson, Morristown, Penn.; George Rosendale, New York, N.Y.; Robt. W. Goffe, New York.

Wm. J. Shields, Wigwam P.O., is manager, employing 10 men.

Crews-McFarlane.—The Crews-McFarlane Mining Company, Limited, owns mining claims J.S. 275, 276, 277, 278 and 280, also H.F. 305 and H.F. 306 in the township of Milner, situated west of Hewitt lake in the Gowganda area.

Shaft No. 1 was continued to a depth of 135 feet and abandoned. On the date of inspection, February 27th, 1917, shaft No. 2 on claim J.S. 280 was down 86 feet, with sinking in progress.

The plant included one upright 25 h.p. boiler, one portable loco type 60 h.p. boiler, one two-drill compressor, one 8 by 10 hoist, one 5 by 7 hoist.

The officers of the company are: President, C. H. Streit, Nutley, N.J.; secretary, Henry R. Crews; treasurer, Wm. J. McFarlane, manager, J. G. Wheaton, Gowganda P.O.; 25 men were employed on the last date of inspection.

Miller-Lake O'Brien.—This mine in the township of Nicol, owned by M. J. O'Brien of Renfrew, worked continuously throughout 1916. The company operates a hydro-electric power plant at the south end of Gowganda lake developing 800 h.p. from a 30-foot head. Shaft No. 1 is 90 feet deep, and shaft No. 2 or main shaft, 460 feet deep on an incline of 75 degrees. There are eight working levels at 60, 90, 140, 200, 240, 300, 350 and 450 feet. Work during the year was confined chiefly to development on the 350-foot level, where a high-grade vein was discovered in September, 1916.

The 10-stamp mill on the Millerett property was in operation during the year, but the Millerett mine was not working.

J. G. Dickenson, Cobalt, is manager, and B. C. Crowe, Gowganda, superintendent: 75 men are employed in the mine and mill.

Reeve-Dobie.—The Reeve-Dobie silver property on the Mann ridge west of Gowganda lake comprises claims S.W. 3, S.W. 4 and S.W. 5. These were

acquired in 1915 by the following syndicate: A. J. Skobba, Minneapolis, Minn.; Chas. Moore, Bay City, Mich.: F. C. Moore, Sudbury, Ont.; S. Christopherson, Gowganda.

Very little work was done during 1916. Some high-grade silver was taken from an open cut east of the power plant.

Work was in charge of S. Christopherson.

Lorrain and South Lorrain

Bellellen.—The syndicate operating the Bellellen on claim R.L. 470, South Lorrain, worked continuously throughout 1916. The winze on the 100-foot level about 100 feet south of No. 2 shaft was down 145 feet when inspected in November, 1916. About 75 feet of drifting was done at the bottom level. Shaft No. 1 is 70 feet deep with drifts to north and south at the bottom level. Work during the year was confined to No. 1 shaft. Following are members of the syndicate: Chas. Richardson, Haileybury, manager; R. T. Shillington, Arthur Ferland, J. H. Black, all of Haileybury.

Sylvester Carroll is mine manager, employing 5 men.

Comfort.—The Comfort Mining and Leasing Company operated the Wettlaufer property under lease from the Wettlaufer-Lorrain Mining Company. Work during the year was confined to milling of the fines in the dump and the jig tailings from previous milling operations. The tailings were hoisted on an incline and dumped into a raise near the mill, and trammed to the shaft on the 50-foot level.

A Hardinge ball mill, tables, trommels and settling tanks were added to the mill equipment, work was discontinued at the close of the year.

The directors of the company are: Dr. Comfort, Rochester, N.Y.; A. G. Kirby, Chas. Watson and Hector Bellingham.

Rex Taylor was superintendent, employing 15 men.

Currie.—The Pittsburgh-Lorrain syndicate worked the Currie mine on claim H.R. 105, South Lorrain, continuously during the year.

The shaft in the main workings is now 400 feet deep, and work during the year consisted of drifting on the fifth level and raising on the fourth. The winze workings from the fourth level were abandoned.

Shaft No. 2 is 110 feet deep, and 500 feet of drifting in the direction of No. 1 shaft was done during the year.

Thos. B. Rice, Silver Centre, is superintendent; and J. A. Rice, 208 Mills Building, El Paso, Texas, consulting engineer; 35 men were employed on the date of inspection November 12th, 1916.

Lorrain-Consolidated.—The Lorrain Consolidated Mining Company, formerly known as the Harris, continued development work at its property in South Lorrain during the year. Work was in charge of J. G. Harkness on contract; the shaft was sunk to a depth of 263 feet, and about 800 feet of drifting and cross-cutting done on the bottom level. It closed down on June 15, 1917. The compressor

at the adjoining property, owned by the Frontier Company, was used to supply air to the workings.

Jules Cohen is manager, employing 12 men.

Maple Mountain

Taylor.—On the Taylor claim, H.S. 574, south shore of McKenzie lake, Speight township, a small amount of work was done during the year. The shaft was timbered, and drifting resumed on the 150-foot level. The claim is owned by E. O. Taylor, 244 St. George St., Toronto, and underground work was in charge of L. Peterson, Elk Lake, under contract. The plant consists of one 25 h.p. upright boiler and one Napanee 5 by 7 hoist.

White Reserve.—The White Reserve Mining Company, Limited, continued the development of its claims in the Maple Mountain district. Several smaltite veins were discovered by surface trenching. In July, 1917, shaft No. 1 had reached a depth of 143 feet, and No. 2 on 21 vein was 90 feet deep. In No. 1 shaft, stations were cut at the 70-foot and 140-foot levels. On the 140-foot level, a cross-cut was run north to cut No. 21 vein and south to veins 9, 10 and 14. A total of 250 feet of drifting and cross-cutting was performed during the year.

The plant includes one 100 h.p. return tubular boiler, one 9-drill Rand compressor, one Ingersoll-Rand 10 by 12 hoist, shops, saw mill and camps.

The manager reports that in No. 21 vein considerable native silver is found in places, and that several samples across No. 14 vein have shown platinum content in the assays.

J. A. McAndrew, 408 Lumsden Building, Toronto, is president of the company; J. G. Harkness, Silver Centre, superintendent and consulting engineer; and Dan McCrimmon, foreman, employing 20 men.

IV.—EASTERN ONTARIO

Many branches of the mining industry in Eastern Ontario received a decided impetus in 1916. This was due entirely to war conditions. It is quite possible, however, that the increased trade may be retained when peace has been restored.

In the vicinity of Madoc several fluorspar prospects were developed and shipments made amounting to 1,284 tons. Small parcels had occasionally been sent out since 1914 from the Perry and Rogers lots, worked by Messrs. Cross and Wellington. Late in 1916, however, it developed that the Kentucky producers were unable to furnish any spar for export because of the increasing demands of the American steel trade. Canadian consumers immediately began to search for a supply at home, and early in 1917 the price had risen to $14 per ton. The fluorite veins near Madoc vary in width from 18 inches to six feet, and the material is a good average metallurgical grade.

It is estimated that Canadian furnaces consume about 15,000 tons per year, and further development may show that this demand can be supplied by Ontario producers.

During the year the Richardson feldspar quarry near Verona was sold, and a new company known as Feldspars, Limited, was organized which made extensive improvements with a view to increasing the output.

The iron mines of Eastern Ontario were idle during the year.

The Kingston Smelting Company was organized and work resumed at the lead smelter in Kingston, which has been idle for the past two years. Custom lead ores will be purchased, and an endeavor made to keep this plant in steady operation during 1917.

Iron Pyrites

Caldwell.—On lots 1 and 2 in the first concession of Blithfield township, Renfrew county, T. B. Caldwell of Lanark continued to operate his pyrites property. The incline shaft was deepened to 95 feet, and 35 feet of drifting done on the vein. Ten cars of ore were shipped to the Nichols Chemical Company, Sulphide. Since last report a small compressor and additional boiler capacity have been installed. Shipment was made from what is known locally as Clyde lake siding, on the C.P. railway about four miles north of Flower station.

Seventeen men were employed during the year. Mr. Caldwell is manager as well as owner of the mine.

Fowle.—On lots 6 and 10 in the tenth concession of Madoc township, J. C. Fowle of Madoc did considerable development work on a vein of iron pyrites, which outcrops on these lots. Some twenty-three test pits were sunk at various points. Mr. Fowle states that an average sample of the vein matter from sixteen pits ran 33 per cent. in sulphur.

Ten men were employed during the summer months.

Nichols Chemical Company.—The pyrites mine and chemical plant operated by the above company are situated at Sulphide in Hastings county, on lot 23, concession XI, township of Hungerford. The Nichols Chemical Company is a subsidiary of the General Chemical Company of New York.

Work underground during 1916 was confined to stoping on the first, second, third and fourth levels, chiefly west of the shaft. No sinking was done, and the shaft remains at 575 feet in depth.

The mine and plant were run to capacity during the year, because of the heavy demand for acids and other chemical compounds produced at the Sulphide works.

An interesting feature of the year's work was the success of the Sulphide plant in winning the inter-plant accident competition prize. This competition was carried on between sixteen plants operated by the General Chemical Company in the United States, and the Sulphide and Capelton plants in Canada. Out of a possible working time of 334,878 hours, the total lost time due to accidents was only 138 hours. The competition was carried on from March 1st to December 1st, 1916.

W. H. DeBlois is local manager, employing 35 men at the mine and 150 at the chemical plant.

Queensboro Mine.—This mine near Queensboro in the township of Madoc, is owned and operated by the Canadian Sulphur Ore Company. Sinking was resumed in the main or No. 3 shaft, which had reached a depth of 350 feet at the close of the year. On the third level, the main drift had been carried 280 feet to a point directly under the surface showing, known as the No. 5 ore body. No. 2 shaft was pumped out, and will be sunk to the 200-foot level, and the workings connected with No. 3. The plant has been enlarged, and a second compressor installed giving sufficient power for all development work.

A switching engine for handling cars between the mine and the main line of the Canadian Northern was purchased during the year.

The officers of the company are: Alex. Longwell, Toronto, president; Geo. H. Gillespie, Madoc, manager; H. F. Smeaton, Queensboro, superintendent. Sixty men were employed during the year.

Copper

Cashel Copper Mines, Limited.—This company was incorporated in March, 1916, and acquired the east half of lot 31, and the south 20 acres of the west half of lot 31, in all 76 acres, in the first concession of Cashel township, Hastings county.

Work was begun about September 1st, and on the date of inspection in December, 1916, a vertical shaft 5 feet 6 inches by 10 feet 6 inches had been sunk to a depth of 50 feet. The shaft was on a vein containing chalcopyrite. No shipments had been made, but a small quantity of hand-picked vein material was on the dump.

C. S. Crysler is president and manager; W. Younger, vice-president; E. W. Storer, treasurer; S. B. Dawson, secretary.

Twenty men were employed in sinking by hand, under the direction of Mr. Crysler.

Gold

Cordova.—Work during the year at Cordova mines was confined chiefly to the completion of the surface plant. Late in the year pumping was begun in No. 1 and No. 3 shafts, and a little mining done above the 400-foot level in No. 1 shaft. The power plant and dam on Deer Lake were completed, and it was found that during the summer months the water supply would prove insufficient. In order to keep up the normal supply of water, at least three conservation dams are needed, one each at Whetstone, Loon and Paudash lakes. With these in place it has been estimated that the turbines could be operated to capacity the year round. It was the intention of the management to carry on active mining operations during 1917, but a disastrous fire on March 13, 1917, destroyed the shaft house, and crushing plant, 30-stamp mill, water tanks, blacksmith and machine shops, trestles over conveyors and in fact all the surface equipment at No. 1 shaft. The new compressor plant, office and laboratory were saved. This will delay operations for some time.

Peter Kirkegaard is managing director of the company, and S. H. Brockenier was appointed manager a short time before the fire. Thirty-five men were employed.

Cobalt-Frontenac Mining Company, Limited.—Mining rights owned by this company in eastern Ontario include the following properties:—

Lots 24 and 25, concession VI, township of Kaladar, known and described in previous reports as the Golden Fleece mine.

North half of lot 26, and the southwest quarter of lot 27, concession VII, township of Kaladar, and lot 33, concession I, township of Barrie.

Very little mining work was done during 1916. No. 2 shaft was re-timbered, and sunk to a depth of 60 feet. About 300 tons of ore were mined from the open pit near the mill, and put through the stamps.

On the Scootamatta river, near the village of Flinton, the company purchased a saw mill plant and water power, which will be developed as a source of electrical energy for the Golden Fleece mine. During 1916 a concrete dam 127 feet in length was built, and at this point a head of 22 feet is obtained.

It was expected that power would be turned on in August, 1917, but non-delivery of plant will prevent completion when expected. The foundation has been blasted for the installation of a Kennedy horizontal turbine.

The officers of the company are: George W. Millen, president, Hamilton; M. G. Notz, secretary-treasurer, Hamilton; M. D. H. Fletcher, managing director, Hamilton; Ernest Craig, superintendent, Flinton.

The head office is at 501 Bank of Hamilton Chambers, Hamilton, Ontario.

Ten men were employed during the year, chiefly on construction work.

Ore Chimney.—Underground work at the mine operated by the Ore Chimney Mining Company near Northbrook, in Barrie township, Frontenac county, was resumed 8th August, 1916, having been discontinued December 25th, 1915. On the date of inspection, April 9th, 1917, the development was as follows:—

Shaft, depth 405 feet.

First level at 108 feet, east drift 17 feet, south drift 6 feet and cross-cut 25 feet.

Second level at 150 feet, north drift 127 feet, south drift 79 feet, total cross-cutting 78 feet.

Third level, at 250 feet, north drift 83 feet, south drift 100 feet, total cross-cutting 237 feet.

Fourth level at 300 feet, cross-cutting 31 feet.

Fifth level at 332 feet, cross-cutting 44 feet.

Sixth level at 400 feet, cross-cutting 62 feet, north drift 20 feet, south drift 20 feet. A raise has been begun in the south drift 55 feet east of the shaft. This raise will be carried through to the surface and will serve as an auxiliary shaft.

Since last report a third boiler has been installed, there now being a battery of three boilers with a total of 280 h.p. A second Laidlaw-Dunn-Gordon compressor has been purchased from the Golden Fleece company. This is a duplicate of the machine now being used, and has a capacity of 520 cubic feet.

At the mill the following additions to the plant were installed during the year: one set of Buchanan rolls 14 in. by 24 in.; two revolving screens 6 feet by 30 in.; four automatic ore feeders; four Wilfley tables; one Sturtevant jaw crusher, 8 in. by 24 in.; one roasting kiln 5 feet by 30 feet.

There were no ore shipments during the year.

The officers of the company are: Anson E. Fletcher, president, Hamilton; O. E. Dores, secretary-treasurer, Hamilton; W. G. Anderson, manager, Northbrook. Twenty-five men were employed during the year.

Talc

Connolly Mine.—This mine, situated near the village of Madoc adjoining the Henderson mine on the east, is owned and operated by the Anglo-American Talc Corporation, Limited.

Owing to non-delivery of machinery, the mill was not completed during the year, and very little work was done underground. The shaft remains at the same level as at last report, 140 feet, and on the date of inspection, February, 1917, work had been resumed underground and drifting begun east and west on the 125-foot level. Part of the necessary machinery was in place in the mill, including one No. 3 Gates crusher, one Griffin pulverizer, and one tube mill 5 by 24 feet. Hydro-electric power is used to operate the compressor and mill machinery. The officers of the company are H. S. Predmore, president, New York; R. J. Gilchrist, secretary, New York; Thomas Carswell, superintendent, Madoc. Twelve men were employed in the mine and mill.

Eldorite, Limited.—Work was resumed on this property early in 1916 under the management of A. E. Millington. The mine and mill formerly owned by the Canadian Talc and Silica Company, are situated near Eldorado station on the Central Ontario railway. Shaft No. 1 is 65 feet deep, and No. 2, 15 feet. A new ore body was being worked west of No. 1 shaft, showing fairly good talc. This shoot was 25 feet wide, and at the working face was 35 feet to the back of the stope. During the year the mill machinery was changed to meet modern requirements. Shipments were made steadily until October, when both mine and mill were closed.

The officers of the company are: Sir Douglas Haig, president; P. H. Morton, acting president; J. A. Haig, managing director; E. Kempster, secretary, all of London, England. Fifteen men were employed during the summer.

George H. Gillespie and Company.—The talc grinding plant operated by this company is situated near the Grand Trunk station, in the village of Madoc. During the year a third tube mill was installed, also a new jaw crusher and six bolting machines. This installation greatly increases the capacity of the plant.

All of the ore ground came from the Henderson mine operated by Cross and Wellington.

Eighteen men were employed in the mill during the year.

Henderson Mine.—This mine near the village of Madoc in Hastings county is operated under lease by Messrs. Cross and Wellington.

The caving system started in 1914 has worked satisfactorily, and a force of 8 men produce an average of 1,100 tons per month. Work during the year was practically confined to the first level, slicing caved material between No. 1 and No. 4 raise.

About 90 per cent. of the output goes to the Gillespie grinding plant, and the balance is supplied to the trade as mine-run ore.

Mr. Stephen Wellington is manager of the mine.

Fluorite

Cross and Wellington.—The most extensive development has been done by the above firm on lot 11 in the thirteenth concession of Huntingdon township, on what is known locally as the Perry lot, from the name of the original owner.

On this lot two shafts have been sunk. No. 1 shaft was abandoned at a depth of 68 feet, and No. 2 shaft had been sunk to a depth of 55 feet on the date of inspection in February, 1917. At the bottom of No. 2 shaft the vein was five feet in width.

Near the shore of Hog lake, on the same lot, a small portable plant was installed, and considerable ore shipped from an open cut on an outcrop of spar which averaged 5 feet in width. The open pit measured 73 feet long, by 5 feet wide, by 15 feet deep. At this depth the water was increasing in volume, and work had to be stopped till a pumping plant could be installed.

Mr. Stephen Wellington is manager, employing ten men.

Hungerford Syndicate.—On lot 1 in the fourth concession of the township of Madoc, the above company began operations on a fluorite deposit late in 1916.

A small plant was installed, consisting of one portable locomotive 50 h.p. boiler, one small two-drill compressor, and a single drum Mac Machine Company hoist. The vein outcropped within a few feet of the farm owner's residence, and a shaft was sunk on the outcrop. On the date of inspection February 6th, 1917, the shaft had reached a depth of 25 feet and about 60 tons of clean crystalline spar had been stock-piled.

Robert Phillips was in charge of operations for the owners, Messrs. Harry Hungerford and Robert Gilchrist. Twelve men were employed.

Mineral Products, Limited.—On the McIlroy farm, lot 2, concession IV, township of Madoc, C. R. Ross and associates did considerable work on a fluorite occurrence, which may develop into a steady shipper. The vein had an average width of 30 inches, and the vein matter is almost pure fluorite. This has been removed by open-cut method for a distance of 200 feet, the deepest workings being 50 feet. At this point a shaft was sunk and development continued.

On the date of inspection, February 6th, 1917, the organization of the company had not been completed, but the officers included Messrs. G. S. Weyman and Charles H. Dearborn of Boston, Mass.; and R. R. Casement, Madoc, with Charles R. Ross, Madoc, as manager.

Seven men were employed on the date of inspection.

Wellington and Munro.—On lot 13, concession XII, township of Huntington, the above firm did considerable work on a feldspar deposit. This occurrence is across Hog lake from the Perry lot, and with further development may prove to be a consistent shipper. The vein had an average width of five feet, and ore was being removed from two open pits, one 15 feet long by 20 feet deep, and

the other 50 feet long by 20 feet deep, both six feet wide. The ore was hoisted by means of a horse whim and a small derrick. A short distance from the two pits on which work was in progress, a third outcrop was found which showed ore for a width of 8 feet.

On the east half of lot 1, in the first concession of Madoc township, on the Lee farm, Messrs. Wellington and Munro did a small amount of work on a vein having an average width of 30 inches. One car of high grade spar was shipped from this lot, and a second car was ready for shipment. Work was discontinued on the date of inspection February 7th, 1917, till a pumping plant could be installed.

Stephen Wellington is manager, employing 15 men.

Lead

Galetta.—The Galetta lead mine and smelter are situated on Chats island, lot 22, concession VI, township of Fitzroy. During 1916, the ore above the first level at 100 feet was stoped out, a winze sunk to the 185-foot level, and 170 feet of drifting done.

The concentrating plant on the date of inspection in March, 1917, was handling about 30 tons of ore per day, and making two grades of concentrates. The first, a clean galena, is sent to the smelter, and the second, a galena-zinc mixture, is stock-piled for further treatment.

During the year the smelting plant was completed and put in operation. It is said to have a capacity of 18 tons of pig lead per 24 hours.

The property is owned and managed by the Estate of James Robertson, Montreal. Sixty-five men were employed during the year.

Indian Lake Lead Mining Company.—This company was organized in 1916 to take over the Frontenac lead mine near Perth road in Frontenac county. No work was done in the mine during the year. Some changes were made in the mill, and it is possible that the mine will be pumped out and operations resumed in 1917.

Mark J. Paterson was in charge of work for the new company.

Heck and Drummond.—On lot 17 in the sixth concession of the township of Bedford, the above firm did a small amount of development work on a lead prospect during the summer of 1916. Work was commenced in July and continued for some months. Several test pits were sunk along the strike of the vein, and in places some rich pay streaks of galena were uncovered. The ore appeared to be a fairly clean galena in a calcite gangue, and from one pit a carload of hand-picked ore was shipped to Perth Amboy. All work was done by hand, no plant having been installed on the date of inspection in December, 1916.

Seven men were employed under the direction of George Heck, of Prescott. Interested with Mr. Heck in this prospect, are Messrs. F. P. Drummond of Burridge, Ontario, and J. H. Drummond of New York.

Feldspar

Feldspars, Limited.—This company was organized early in 1916, and purchased the Richardson properties near Verona in Frontenac county. Included in the sale were the Reynolds and Desert lake quarries, where most of the spar produced in Ontario was obtained. The Kingston Feldspar and Mining Company retained the Card quarry, which at one time was a steady shipper of feldspar, but has been closed for the past six years. This will probably be re-opened as a source of silica rock, for which there is an increasing demand.

Extensive changes have been made at the Desert lake mine by the new management. Heretofore, the spar has been taken from an open pit, which in the course of many years' operations has assumed large proportions. It is now 350 feet long by 100 feet wide, and in places 100 feet deep. It is the intention of the new management to sink a shaft at some point in the wall rock near the south end of the pit, and hoist all material through this shaft, thus doing away with the derrick and open bucket system. New boarding camps have been built to replace the buildings in use, which were situated too close to the pit for safety. It is possible also that in 1917, an aerial tram will be installed to carry the ore to the track, instead of transporting it in scows over 30-Island and 13-Island lakes to Glendower siding.

The officers of the company are: S. Harry Worth, president; W. E. Segsworth, managing director; R. F. Segsworth, secretary-treasurer; J. Ralph Scott, superintendent. Fifty men were employed during the year.

Feldspar Quarries, Limited.—This company was organized in 1916 by Messrs. Frank and George Hurlburt, to work the feldspar property in Loughborough township described in the Bureau's 25th annual report under the title Hurlburt prospect. This prospect was abandoned early in the year, and the prospect on the Reynolds farm in the 10th concession of Portland township purchased from the Canadian Feldspar Corporation.

This property was a steady shipper of high-grade spar during 1916. At the close of the year the open pit was 120 feet long by 65 feet wide by 70 feet deep.

The plant consists of two upright boilers, 25 h.p. each, one Napanee hoist, and one guyed derrick with 10-foot boom. Steam is used for drilling, and the rock is hand-picked in the pit. Late in the year the above company purchased the feldspar grinding plant near Parham station from the Dominion Feldspar Company.

The plant was repaired but no spar was ground in 1916. It is the intention to grind at this plant the output of the company's quarry, and also purchase any custom ores that may be offered.

George Hurlburt is manager of the quarry and mill employing 15 men.

Sidney H. Orser.—On lots 12 and 13 in the sixth concession of the township of South Sherbrooke, S. H. Orser of Perth quarried feldspar during the year. This deposit was originally owned by Rinaldo McConnell, who did a small amount of work some years ago. On the date of inspection September 27th, 1916, Mr. Orser employed 10 men, and work was being pushed vigorously to fill

a contract. The pit was 20 feet wide, and good spar had been stripped for a distance of 100 feet along the dike.[1]

Shipment was made from Maberley station, C.P. railway a distance of three miles from the quarry.

Work was discontinued 21st December, 1916, and the quarry leased to H. N. Kraft. During the year this pit produced 2,000 tons of feldspar.

On lot 17 in the sixth concession of South Sherbrooke township, the Patterson farm, Mr. Orser took an option and did some development work. A small amount of feldspar was quarried and hauled to Maberley for shipment.

Victoria Feldspar Quarry.—This quarry, on lot 33 and the north half of lot 32, in the third concession of Bedford township, was working for a short time only in 1916. Early in the year it was the intention of the owners Messrs. J. M. Stoness and Sons to actively develop the property and if conditions warranted it, to build a grinding plant at the quarry. These plans were changed on the death of the principal owner, J. M. Stoness.

The quarry is well located for shipping purposes, as the C.P. railway runs directly through the property. It is situated about three miles west of Crow lake station on the Lake Shore line of the C.P. railway.

Mica

Anglin.—The Anglin Mica Mining Company, Limited, continued to develop its property near Gould lake, on lot 10 in the tenth concession of Loughborough township. The workings on the date of inspection in January, 1917, consisted of a series of open pits, the deepest one being 60 feet. The mica occurs in pockets, and wherever the gangue appears favourable an opening is made and abandoned when the mica is not found in paying quantities. This system appears to be general in mica mining, with the one exception of the Lacey mine at Sydenham, where the crystals are found at depth, and the veins have been worked for many years. The plant at the Anglin mine consists of one portable locomotive boiler, two derricks and a steam drill.

S. Anglin, Kingston, is president of the company; F. R. Anglin, secretary; and J. E. Anglin, manager. Fifty men were employed during the summer months.

Buck Lake.—A mica prospect was opened during the year by the Buck Lake Mining Company on lot 22, in the eleventh concession of Loughborough township.

A narrow vein was followed down on an incline to a depth of 65 feet, and considerable mica removed. The plant included one small stiff-leg derrick and horse whim.

Alex. Watson, Fairmont, West Virginia, is president of the company, and work during the summer was in charge of Henry McCadden, Perth road. Four men were employed.

Lacey Mine.—The Lacey mine near the village of Sydenham in Loughborough township is owned and operated by the General Electric Company. It is the

[1] This is the quarry in which the mineral euxenite was found, described in the present volume by Dr. W. G. Miller and Cyril W. Knight.

largest producer of mica in the Province, and is said to be the largest in the world.

During the summer months, work was resumed in the open pit; in the winter the mica is obtained chiefly from the stope in the milky vein. The mica is shipped rough-cobbed to the trimming and splitting plant operated by the company in Ottawa. The Canadian operating company is known as the Loughborough Mining Company.

George W. McNaughton is manager of the company, and Henry Smith, mine superintendent. Fifteen men are employed at the mine.

Sidney H. Orser Mica Company.—On lot 6, in the eighth concession of Burgess township, this company continued to develop the mica property formerly known as the Burns mine. Several new veins were discovered, but no pits or workings of a permanent nature were developed. The mine was closed on November 15th, 1916, and work discontinued for the winter months. Four men were employed during the summer months. A considerable quantity of mica was taken out and teamed to the cleaning house operated by the company at Perth. Mr. Orser has taken an option on a new discovery of mica near Bolingbrooke station, C.P. railway, in the township of South Sherbrooke, and intends to develop this during 1917.

Average prices received for mica during the year were higher than in 1915. The several sizes sold per pound as follows:—

1 x 1	6 cents	2 x 4	60 cents
1 x 2	11 "	3 x 5	$1.00
1 x 3	17 "	4 x 6	$1.30
2 x 3	40 "		

The smaller sizes were again in good demand.

Kent Bros.—This firm, with headquarters at Kingston, has been active for a number of years in the mining and marketing of mica. They are the chief owners of the Taggart mine on the west shore of Bob's lake in Bedford township, which was worked with a small force during 1916. On lots 2 and 3 in the first concession of Burgess township, mica was mined from several pits with a force of three men under foreman J. W. Silver. This property is owned outright by Messrs. Kent Bros., and in the early days of eastern Ontario mining was a large producer of phosphate. The pits run from 10 to 40 feet in depth.

On lot 4 in Bedford township near Buck lake, four men were employed all summer in mining mica, in various pits and old openings. All of the mica is rough-cobbed at the mines, and shipped to Kingston where it is finished, trimmed and split for the market.

Sydenham Mica and Phosphate Mining Co.—On lot 7, in the eighth concession of Loughborough township, this company built substantial camps, and began operations on a promising mica prospect in the fall of 1916. No shipment had been made up to the date of inspection in December, 1916, but a plant was being installed and arrangements made for a cleaning house in Sydenham village.

H. N. Kraft is in charge of operations, employing seven men.

Trimming and Splitting Plants.—The following firms are engaged in trimming and thin-splitting mica: At Ottawa, Loughborough Mining Company, Laurentide Mica Company, S. O. Fillion, Eugene Munsell and Company, and R. Blackburn; and at Kingston, the Anglin Mica Mining Company and Kent Bros.

Molybdenite

In the twenty-fifth annual report of the Bureau of Mines a fairly complete description is given of the known occurrences of molybdenite on which work had been performed. During 1916 some of the prospects mentioned in this report were sold, and on many of them no work was done. The assets of the Orillia Molybdenum Company were taken over by the International Molybdenum Company. The new company being a merger of the Orillia and O'Brien interests, including the O'Brien molybdenite mine, the smelter at Orillia, and the concentrating plant at Renfrew.

The Legree prospect on lots 35 and 36 in the fourteenth concession of Brougham township was reported sold to a New York company known as the Steel Alloys Corporation, and very little work was performed during the year.

Chisholm Mine.—This property on lot 5, concession XIV, Sheffield township, was described in the 25th annual report under the title Sheffield mine. The name has since been changed to the Chisholm mine from the name of the owner. Early in the year it was under option to the International Molybdenum Company, but the option was never exercised, and the property reverted to A. M. Chisholm, the original owner. A small mill was built, and a low-grade concentrate was produced and shipped to Ottawa for further treatment. The plant consisted of one Sawyer-Massey jaw crusher, two sets of 10 by 16 rolls, followed by two Sturtevant screens, the oversize from the screens being returned to the rolls. By this process it was claimed that a 15 per cent. shipping product was obtained.

Twelve men were employed by Mr. Chisholm, who was in charge of all work at the property.

International Molybdenum Company.—This company was organized in 1916 by G. P. Grant of the Orillia Molybdenum Company. Options were taken on various prospects including the Jamieson in Lyndoch township, the Chisholm in Sheffield township, the Moran prospect adjoining the O'Brien mine, and others in Quebec and British Columbia. In the town of Renfrew a suitable building was secured and a concentrating plant installed, to which the ore from the several properties could be taken for treatment before shipment to the smelter at Orillia.

The Chisholm and Jamieson prospects reverted to the original owners, and most of the ore received at the Renfrew plant was shipped from the O'Brien mine in Brougham township. This mine was worked up to 22nd December, 1916. Since that date all work was done on the property adjoining the O'Brien, known first as the Moran prospect, later sold to the Ross Syndicate of Ottawa, and in the spring of 1916 leased by this syndicate to Frank G. Todd of Montreal, who in turn leased it to the International Company. A vertical shaft had been sunk to a depth of 26 feet on the date of inspection in January, 1917, and several

open cuts made on promising veins. The plant at the mine included two portable locomotive boilers, one Jenckes hoist, one Smart-Turner pump, two derricks, and seven machine drills. Substantial boarding camps, office and shops have been erected on the property.

The mill at Renfrew is designed to treat ore from the company mines, and any custom ore offering. The concentrates from the mill are shipped to the smelter at Orillia, where molybdic acid and ferro-molybdenum are manufactured.

The officers of the company are: J. L. Murray, Renfrew, president: H. A. Jordan, Renfrew, secretary: G. P. Grant, Orillia, managing director, and J. F. McKenzie, mine superintendent.

Twenty men are employed at the O'Brien mine and 15 men at the Renfrew mill. This force does not include the teamsters hauling to Ashdod station from the mine, or the office staff at the mill.

Renfrew Molybdenum Mines, Limited.—This company was actively engaged during the year in the mining and concentrating of molybdenum on their property lots 8 and 9, concession XI, township of Brougham.

Exploration was carried on by shot drills, and a two-compartment shaft sunk to a depth of 83 feet, with three working levels. A complete mining plant was installed consisting of two Jenckes locomotive type boilers, 60 h.p. each, one Rand compressor, capacity 585 cubic feet; one 6 by 8 Jenckes hoist, and laboratory.

About July 1st, work was begun on the foundation for the concentrator, which was completed and running before the close of the year. The ore is first broken in a Farrell jaw crusher, then fed direct to a Hardinge ball mill, the feed being controlled by a Challenge feeder. From the ball mill it passes to a concave sizer. The oversize from this screening operation is returned to the ball mill, and the undersize to settling tanks, mixers, and then direct to an Elmore vacuum oil unit, where concentration is completed. The Elmore unit has a capacity of 35 tons per day, and the oil used is a crude kerosene costing about 5 cents per ton of ore treated. It is claimed for this process that an extraction of 95 per cent. is obtained, and the concentrate is exceptionally high-grade, running from 90 per cent. upward in molybdenum content.

At the time of inspection, January 25th, 1917, adjustments were being made in the plant, and it was not yet running to capacity. About 300 lbs. per day of concentrate was being produced for shipment to France.

The officers of the company are: Jean Vanophen, Brussels, Belgium, president: R. Leprohon, Grand Mere, Quebec, secretary; P. C. Neault, Grand Mere, Quebec, treasurer: and Charles Spearman, Mt. St. Patrick, manager: 65 men were employed in the mine, mill and surface development work.

Spain.—The Spain mine, so called from the name of the owner William J. Spain of New York, is situated on lot 31, in the fourth concession of the township of Griffith. Production was not very steady during 1916, the first six months being taken up in the erection of the concentrator mentioned in the Bureau's 25th annual report. The first mill run was made on June 22nd, but it was shut down for adjustments when inspected on June 29th.

The plant installed, follows closely the original design described in the 25th annual report.

Work during the year was under the supervision of Michael Fogarty of New York.

Graphite

Black Donald.—The Black Donald Graphite Company continued to be the largest producer of graphite in the Province. The mine and mill are situated about 14 miles from Calabogie, in Renfrew county. The mining rights of the company include lots 17 to 20 inclusive, in concessions 1, 2 and 3, township of Brougham.

To meet the increased demand, the mine was worked all winter in 1915-16, whereas heretofore mining operations have been suspended during the winter months.

In March, 1916, a new shaft was sunk near the old workings. This shaft had reached a depth of 57 feet at the close of the year, and was producing about 25 tons per day of ore equal in grade to the average product of the old workings.

In 1916 a considerable quantity of Ceylon and Corea graphite was marketed in America, chiefly the very highest grade for crucible stock only. The stimulus given to the trade during the past two years is due entirely to war conditions. The interruption to shipping, both from Ceylon and Senora, Mexico, called for an increased production from the mines in Canada and United States. In the state of Alabama alone, fifteen new properties were opened during the year. Under ordinary conditions these mills alone would produce all the trade could absorb. The price rose for No. 1 flake from 6 cents per pound to 12 cents in 1916.

Seventy-five men were employed at the mine and mill under superintendent J. G. Patno.

The officers of the company are: A. M. Munger, Kansas City, president; R. F. Bunting, Calabogie, general manager and treasurer; J. N. Snead, Calabogie, secretary.

Globe.—On August 12th, 1916, the assets of the Globe Graphite Mining and Refining Company were sold by the chief owner, Rinaldo McConnell, to a group of capitalists from Syracuse, New York, who continued to operate under the above company name.

The mine is situated on lots 21 to 23 inclusive, in the sixth concession, township of North Elmsley, and the ore is teamed to the mill at Port Elmsley, a distance of three miles.

Under the direction of the owners, a contract was given Messrs. Smith and Durkee of Sudbury for several hundred feet of diamond drilling. The mill was enlarged, and the process of refining changed to meet modern conditions and increase the capacity. At the mine two shafts were begun. No. 2, incline, was down 20 feet, and No. 3 vertical, 42 feet, on the date of inspection in February, 1917.

Additional plant at the mine included one compressor with a capacity of 300 cubic feet, one portable locomotive boiler, 60 h.p., one return tubular boiler, 80 h.p., one double drum Lidgerwood hoist.

The officers of the company are: Charles A. Lux, Syracuse, president; George G. Fryer, Syracuse, secretary; George H. Beebe, Pt. Elmsley, manager: George N. Brewer, Pt. Elmsley, superintendent. Thirty-five men were employed at the mine and 12 at the mill.

National.—The National Graphite Company, Limited, continued development on its property, lot 24, concession XIII, township of Monteagle.

The No. 1 shaft or pit, described in the last annual report, supplied most of the ore mined by the company during 1916, and at the close of the year this shaft was 125 feet deep. Pit No. 2 was 40 feet deep, and pit No 3, 20 feet deep. Work now in progress will connect pits 1 and 2, at the 125-foot level. The mine is situated near the village of Maynooth on the Canadian Northern railway, and during the year a boiler and compressor plant was erected near the track about 4,000 feet from the mine. This installation consists of one 16 feet by 72 inches, return tubular Goldie McCulloch boiler, 150 h.p., and one Rand compressor, capacity 2,000 cubic feet of free air per minute.

The new plant had not been put in commission up to 11th April, 1917, power being still supplied by the small 315-foot Rand compressor at No. 1 shaft.

The last shipment of ore to the Harcourt mill was made 20th December, 1916, and since that date all ore has been stock-piled at the mine. Manager Foster stated that a re-organization of the company was in progress, and it was probable that during 1917 the mill at Harcourt would be dismantled and moved to the mine at Maynooth.

Finished flake graphite to the extent of 900,000 pounds was shipped during 1916. The lower grades are in demand as foundry facings, and all the No. 1 product went to the crucible manufacturers, with the exception of a shipment of 50 barrels of No. 1, which went to a munitions factory in France. The officers of the company are: W A. P. Schurman, president and treasurer, Toronto: R. W. Foster, manager, Maynooth: W. H. Matthews, director, Toronto.

Twenty-five men were employed at the mine and 12 at the Harcourt mine.

Corundum

The Manufacturers' Corundum Company, Limited, resumed operations at the Burgess property 15th April, 1916, and closed down 1st August, 1916. In the meantime prospecting and development was continued on properties acquired by the company in the townships of Raglan and Radcliffe, and in August the Burgess mill was dismantled and moved to Palmer rapids in Raglan township. At this point a new mill was erected, to treat the ores mined on the following properties:—lot 32, concession 1, township of Radcliffe: lots 25 to 28 inclusive, concession 19, township of Raglan; lot 24, concession 18, township of Raglan. On this latter lot the mill is situated.

The mill has a capacity of 100 tons per day, and the method of treatment varies greatly from that previously employed at Burgess and Craigmont. A leading feature of the milling practice is in the classification of the Wilfley table feed, resulting in a much higher grade shipping product.

As noted in previous reports, the ore deposits are very shallow, and have to be worked by the open pit method. As a result, work is being carried on in several places at the same time and portable thaw houses, fuse and cap houses, and boiler plants have to be employed. The ore is teamed to the mill from the various pits, in some places a distance of four miles.

The officers of the company are: D. A. Brebner, 58 King St. East, Toronto, managing director; A. W. Holmsted, secretary, Toronto; Prof. H. E. T. Haultain, consulting engineer, Toronto; E. B. Clarke, superintendent, Jewelville, P.O.

Seventy men were employed during the year.

Quarries

Canada Cement Company.—The quarry operated by this company to supply stone to its No. 5 plant at Point Anne near Belleville, was opened for the year's operations in May, 1916, having been closed for some time previous. From May till the close of the year, it was worked continuously, and on account of the activity in the cement trade, it will be kept open throughout the winter of 1916-17.

A Clipper churn drill is used, and a large quantity of rock is always kept broken ahead of requirements. Holes are drilled 24 feet deep and 5 and 6 inches in diameter

H. L. Shock is manager, employing 35 men in the quarry.

Point Anne.—Point Anne Quarries, Limited, situated about one-half mile west of the Canada Cement plant, worked to capacity throughout the year 1916. The quarry is now one-half mile long by 100 feet wide, and has an average depth of 30 feet. Drilling is done with an Armstrong electric well drill, and the broken rock is loaded by steam shovel. In addition to the regular output of crushed stone of all sizes, shipped by lake and rail, 10,000 tons of crib-filling was supplied to Toronto. One No. 18 McCully crusher was added to the plant during the year.

The officers of the company are: M. J. Haney, president; J. F. M. Stewart, manager; A. N. Harnwell, secretary-treasurer; A. G. Bennett, superintendent.

Twenty-six men were employed during the year.

Hastings Quarry Company.—On lot 11 in the fourteenth concession of Hungerford township, the quarry owned by this company was operated for two months from 15th September to 15th November, 1916. A special order for crushed red granite was being filled for use at the Bloor Street Viaduct, Toronto, and on the completion of this contract the quarry closed. The rock is loaded from bins to cars on C.N. railway siding from Bridgewater.

John Grant is manager of the quarry, which had been shut down for the previous two years, and the steam plant utilized for the operation of a sawmill on the quarry property.

For various reasons, mainly arising out of the war, which manifested themselves in slack demand by the building trade, and small appropriations by townships for road work and other municipal demands, a large number of the quarries described in previous reports of the Bureau were closed entirely or worked for

short periods only during 1916. This condition will probably continue during 1917 and to the close of the war. A few were opened for two months to fill special contracts, such as the Hastings quarry, others for a longer or even shorter period. For this reason, and the fact that many were closed entirely when visited by the Inspector no attempt is made to describe these quarries fully.

V.—SOUTHWESTERN ONTARIO

The remarks made regarding quarries in eastern Ontario apply also to those of southwestern Ontario, with the exception of quarries operated for the production of white lime. The demand for this product is fairly steady and increasing, with a tendency on the part of producers to erect hydrating plants to supply the large Canadian demand. It is possible that in a few years the imports of hydrated lime, chiefly from the Ohio plants, will cease entirely, and the whole Canadian trade will be supplied from Ontario plants. The limestone in the vicinity of Teeswater and Elora has been found to be particularly suitable for hydrating purposes.

Quarries

Boyd.—On lot 3 in the fourth concession of Nassagawaya township, the Boyd Pressed Brick Company operates a quarry in the Medina shales for the manufacture of pressed brick. The quarry has a working face 25 feet high, and this is operated in two benches.

George Lamb, Milton, is manager of the company, employing 10 men in the quarry.

Canada Cement Company.—This company's quarry and plant at Port Colborne, shut down 21st January, 1916, was re-opened 5th April, and ran continuously till the close of the year. In the quarry a 20-foot face is being worked, just north of the Grand Trunk right of way. Part of the stone is being removed from the Reeb property, on which a royalty is paid, and part from the company's own quarry.

Drilling is done by two Clipper churn drills, drilling 5-inch holes, and blockholding by plugger drills, for which air is supplied by a small Westinghouse air pump. This is a portable outfit, and works efficiently if the air line is kept under 50 feet.

S. R. Preston is manager, employing 25 men.

Canada Crushed Stone Corporation, Limited.—The quarry and crushing plant of this company near Dundas in the township of West Flamborough, was in continuous operation throughout the year. A complete description of the quarry and plant was given in the last annual report of the Bureau. In this report was included also an average analysis of the limestone, and the several uses for which it is suitable.

The quarry employs an average of 45 men and the crushing plant 15. C. M. Doolittle is president and general manager of the company, and J. B. Hart secretary-treasurer and assistant manager.

Cataract Sand and Gravel Company.—One of the largest sand and gravel pits in the Province is situated at Cataract Junction on lot 14 in the third concession of Caledon township.

The working face has a depth of 125 feet measured on the incline. The top layer is a coarse gravel, and the bottom bed is composed of finer gravel with clean sand between the two gravel beds. In the summer of 1916 a plant was being installed to strip the upper bed of coarse gravel, and thus work the pit in benches, doing away with the screening plants. A clam shell hoist and hopper was erected on the upper bank, and the material loaded directly into cars below, through a chute 120 feet in length. By this arrangement it will be possible to extract the 20 feet of clean sand without screening.

The pit was purchased by the Hydro-electric Commission in the spring of 1916, and work was under the direction of Chief Engineer F. A. Gaby.

W. A. Alexander, Alton, was superintendent, employing six men.

Coast and Lakes Contracting Corporation.—The head office of this company is at 41 Broad St., New York City, and eleven quarries are operated in various states in the Union. The company's Canadian quarry is situated in the township of Bertie, Lincoln county, about six miles from the village of Ridgeway. During 1916, operations were restricted, and only two cargoes of the large blocks for breakwater purposes were shipped to Buffalo. In addition to this, fifteen cars of rubble were shipped to local Canadian points.

The quarry closed in August, 1916.

H. L. Clapham is superintendent, employing 10 men.

Constructing and Paving Company.—In the township of Erin about two miles northeast of the village of that name, this company operates a large sand and gravel pit. The material is dug by a Beatty clam shell hoist and loaded into dump cars, capacity five cubic yards each. These are hauled on the level to a hopper, and fed directly to a No. 3 Austin gyratory crusher. From the crusher it is elevated to a revolving screen 14 feet long by 3 feet in diameter, constructed in two sections, 10 feet of sand screen and four feet of gravel. This gives two products, sand and gravel. The crushed boulders are not separated. At this plant there is also machinery for manufacturing sand-cement tile. These are made 12 inches long and 3, 4 and 5 inches in diameter.

The officers of the company are: James Pearson, Confederation Life Building, Toronto, president; F. B. Neave, Toronto, secretary-treasurer; W. E. Bristow, superintendent; 6 men are employed.

Contractors' Supply Company.—On lot 27, concession I, Caledon township, near the town of Orangeville, this company quarries limestone for the burning of lime, a small portion of the product being sold as crushed stone. The quarry has a working face of 23 feet, and is 150 feet long by 100 feet wide. There are two draft kilns with a capacity of ten tons of lime each per day. In August, 1914, a plant for the production of hydrated lime was built. The stone in this quarry yields a gray lime only, and in order to compete with the white lime producers, a

second quarry was purchased at Teeswater, Bruce county, and stone from that point shipped to the hydrating plant. In this way both white and gray hydrated lime are manufactured.

The lime from the kilns is first crushed in rolls and conveyed to a bin above the mixer on a belt conveyor. In the mixer or hydrator, 60 gallons of water is added to each ton of lime, through a perforated pipe, and the whole mass rotated until the hydration is completed. It is then screened and bagged for the market.

The plant consists of two horizontal tubular boilers, one jaw crusher, one Simons disc crusher, rolls, screens, elevators, storage bins and bagging room.

F. J. Beharriel, 182 Van Horne St., Toronto, is manager of the company, and Richard Jones, R.R. No. 6, Orangeville, superintendent.

Elora White Lime Company.—This company was organized in 1914 by Mr. John Kennedy of Guelph, who opened up a quarry and erected a hydrating plant in the township of Nichol, concession XII, near the town of Elora.

In November, 1915, a joint stock company was incorporated, owned jointly by the Toronto Plaster Company and the Alabastine Company of Paris, and work was continued under the old firm name Elora White Lime Company till July, 1916. The Alabastine Company then purchased the holdings of the Toronto Plaster Company, and it came under the management of Mr. A. J. Parkhurst, of Caledonia.

The quarry has a working face of 20 feet, and drilling is done by a Cyclone churn drill. Four kilns with forced steam draft, supply one Clyde hydrater, the lime being first pulverized in a Bonnet mill.

The officers of the company are: R. S. Haire, Paris, president; A. J. Parkhurst, Caledonia, manager; J. F. Cameron, Elora, superintendent.

Empire Limestone Company.—The operations of this company during 1916 were practically confined to loading and shipping sand. The quarry, formerly one of the largest shippers in the Province, was closed during the year. The crusher ran for one week only, crushing a few cars of road material.

The company's head office and stock yards are in Buffalo, N.Y., and all lake shipments go to Buffalo. Of the rail shipments, the records for the year 1916 show that about one-half went to Buffalo and the remainder to Canadian points: 135,000 cubic yards of sand were shipped during the year.

The officers of the company are: B. Fuller, president, Hudson and 4th Streets, Buffalo, N.Y.; John Haston, superintendent, Sherkston: and S. J. Fuller, Sherkston, assistant superintendent: 36 men were employed during 1916.

Hagersville Contracting Company.—This quarry is situated on lot 14, concession XIII, Walpole township, near the village of Hagersville. The management report that due to the scarcity of labour in 1916, the quarry was in operation for a short time only. Work was begun 26th April, and the quarry and crushing plant closed July 1st. The plant was described in previous reports of the Bureau, and remains unchanged. In normal times this quarry operates the year round, and has a capacity of 1,000 tons of crushed stone per day, with shipping facilities on three railways.

John C. Inglis is manager of the company.

Michigan Central Quarry.—This quarry, near the village of Hagersville, is operated by the Michigan Central Railway Company as a source of supply of surfacing material, stone for pier-filling and culverts, and building stone. Operations were restricted during the year, due to the scarcity of labour. A six-foot stope, 75 feet in width was taken up through the quarry, and this now gives a working face of 26 feet.

The plant includes one Ingersoll straight line compressor, capacity 425 feet, one No. 7½ and one No. 5 Austin gyratory crusher, one locomotive boiler, and two horizontal tubular boilers, 75 h.p. each; 60 men were employed under superintendent D. E. Cronin.

Milton Pressed Brick Company.—This company recently took over the plants of the Toronto Brick Company near Milton and the Medina Shale Company at Streetsville, which are now operated under the one management. Before this merger was effected, the company operated a large shale quarry and brick plant on lot 1 in the first concession of Esquesing township near the town of Milton. With all three plants in operation, the company takes a leading position in the Province in the manufacture of high grade pressed brick.

At the quarry formerly operated by the Toronto company, the bank is 75 feet high, and a six-foot stope was being taken up during the summer of 1916. The red shales of this district are easily drilled and broken, the drilling is done by hand, and the material hauled to the mixers in carts. At the No. 1 quarry, the overburden is removed by a Thew steam shovel, and the shale kept free from boulders.

J. S. McCannell is manager of the company and C. E. Hill, superintendent, employing 40 men in the three quarries.

Queenston Quarry Company.—The quarry operated by this company on lots 47 to 49, in concessions II and III, Niagara township, worked continuously throughout the year. During the summer months the crusher and screening plant are operated and crushed stone all sizes is shipped.

Charles Lowrey, St. Davids, is president and manager of the company, employing seventy-five men.

D. S. Robertson and Company.—The limestone quarry operated by this company on lot 7 in the sixth concession of the township of Nassagawaya, Halton county, is one of the oldest in the Province. For a great many years it has been a steady producer of white lime. The quarry has a working face 75 feet in height, and extends over a distance of one-half mile. At the east end of the quarry, stone for building purposes is quarried from a bed of Credit Valley sandstone which lies beneath the limestone. The plant consists of two stiff-leg derricks, two hoists with upright boilers attached, and three draft kilns with a capacity of 600 bushels of lime per day. The stone is hauled to the kilns in carts. On the date of inspection, August 30th, 1916, no drilling was being done, and one kiln was kept burning with debris and broken rock picked up near the working face.

D. S. Robertson, Milton, is owner of the quarry, and Charles McDowell, superintendent, employing 15 men.

Rocsand Company, Limited.—In several places in the Province where deposits of mixed sand and gravel are being worked, and where a large percentage of the gravel consists of boulders too large for shipment, the constituents are carefully screened and the boulder product broken in jaw or gyratory crushers. This method utilizes the whole output of the pit, and gives three products, screened sand, gravel and crushed stone.

About 20 miles northeast of Guelph on the C.P. railway in the village of Erin, Wellington county, the Rocsand Company of Hamilton work such a deposit. The excavation has a working face of 16 feet, and the material is dug by a Browning clam shell hoist, and loaded into cars with a capacity of three cubic yards each. These are hoisted to bins and discharged through a hopper feed to a grizzly, with 3-inch opening. This removes at the first operation all boulders, which are elevated to a Mitchell No. 4 jaw crusher.

The undersize is elevated to a revolving screen, which is 26 feet long by 4 feet in diameter, and built in three sections, six feet with screen opening 3/8-inch in diameter, six feet with 1¼-inch screen opening, and the balance with 3-inch opening. From the hoist to the working face is 150 feet, and the tracks are extended as required.

The sand and screened gravel is loaded directly into cars, and the crushed rock is stock-piled.

The officers of the company are: J. G. Baby, 106 Bay St., Hamilton, president; W. S. Connolley, Hamilton, manager; W. J. Dickson, Erin, superintendent; 10 men are employed.

Standard Crushed Stone Company.—This company with head office at Niagara Falls, Ontario, operated two quarries during the summer months of 1916. Work was continued at the St. Davids quarry on lot 44, township of Niagara. The plant at this quarry remains the same as last reported, and includes one 300-foot compressor, one No. 5 Gates crusher, and screening plant. The broken rock is loaded into cars at the working face, and hauled to a turn table. At the Ridgeway quarry, which adjoins the Coast and Lakes quarry, the pit is now 500 feet long by 125 feet wide by 25 feet deep. A 40-ton Marion shovel is used in the pit for loading broken rock into cars, and during the year, a cyclone churn drill, drilling a 4-inch hole, was used for the first time, with excellent results. Work was begun 15th May, 1916, and the plant was closed down 20th November, 1916.

Crushed limestone in sizes from ¼-inch to 3 inches was supplied to the trade.

The officers of the company are: John Symmes, president; Robin Boyle, secretary; J. H. Barbeau, superintendent.

Work at the Ridgeway quarry is in charge of George A. McCoubrey, and 15 men were employed.

Standard White Lime Company.—This company is the largest producer of white lime in the Province, and operates quarries for the production of lime only, at Guelph, Beachville and St. Marys. The St. Marys quarry and kilns were closed during the year, also the quarry owned by the company in the city limits of Guelph. In the township of Puslinch, a short distance west of Guelph,

three kilns were in operation, with a combined output of twenty tons of lime per day. A large percentage of the lime produced at this quarry is shipped as hydrated lime.

At Beachville, near Ingersoll, the company operates a large quarry with five kilns, with a total capacity of 50 tons of white lime per day.

D. D. Christie is president of the company, and J. Kennedy, manager, with head office at Guelph.

St. Marys Portland Cement Company.—The quarry and cement plant operated by this company are in the town limits of St. Marys. The stone is broken in a No. 8 Kennedy crusher, capacity 150 tons per hour, and conveyed to the plant by a belt conveyor, 400 feet in length.

The officers of the company are: Geo. H. Gooderham, president; Mark Irish, secretary and J. G. Lind, manager. Forty-five men are employed in the quarry.

Teeswater Lime Works.—This company operates the oldest quarry and lime works in the neighbourhood of Teeswater, in the county of Bruce. The quarry has a working face of 30 feet, and is 133 feet wide. One draw kiln with a capacity of 90 bushels per day is operated during the summer months, and the local trade only supplied. F. A. Nicholson, Teeswater, is owner and manager of the quarry operating under the above name.

Toronto Plaster Company.—This company opened a quarry and erected three kilns and a hydrating plant late in 1916, on the south half of lot 14, concession VI, township of Culross. The plant and quarry are situated near the C.P.R. station at Teeswater, affording excellent shipping facilities.

On the date of inspection in January, 1917, the plant was not yet completed, and no work other than stripping had been done in the quarry. Three kilns with a capacity of 10 tons of lime each per day were already erected, and the plant was expected to be completed by April 1st, 1917.

In the process used here, about 45 per cent. of water by weight is added to the lime, and the finished product contains about 17 per cent. water, the remainder being taken up in hydration.

The head office of the company is 1062 King St. West, Toronto, and the officers are: John Kennedy, Guelph, president; H. W. Calkins, Toronto, vice-president; T. G. Kennedy, Teeswater, manager.

Wentworth Quarry Company.—This quarry is situated near Vinemount station, T. H. & B. railway, on lot 4, concession V, township of Saltfleet.

The output of the quarry is confined to crushed stone, all sizes; no dimension stone or rubble is shipped. The plant is well located to supply the trade west of Hamilton, and the output is increased each year.

The crushing plant includes one No. 7½ McCully crusher, one No. 5 McCully crusher and one six-section revolving screen. The plant is driven by a Duddbridge twin-cylinder gas engine, supplied by a 115 h.p. gas producer plant.

F. W. Schwendiman is manager, employing 25 men.

Gypsum

Ontario Gypsum Company Limited.—This company was formed in the fall of 1916, by an amalgamation of the Crown Gypsum Company of Lythmore and the Alabastine Company of Paris and Caledonia. Included in the merger are the mine in the township of Oneida, and the grinding plant at Lythmore formerly operated by the Crown Gypsum Company, the mine and grinding plant at Caledonia formerly operated by the Alabastine Company of Paris, and the Carson mine in Oneida township. Up to the close of 1916, the operations were carried on by the former owners as described in previous reports, and on January 1st, 1917, the new company took over the management.

The Paris interests of the Alabastine Company are not included in the merger.

The Carson mine was operated with a small force for three months during 1916. The mill and mine previously operated by the Crown company were closed by the new company, and will not be operated for some time. By this deal, the Ontario Gypsum Company acquires possession of about 1,000 acres of proven ground in the gypsum belt in addition to two large grinding plants.

The officers of the Ontario company are: W. G. Case, Buffalo, president; R. E. Haire, Paris, secretary-treasurer; and A. J. Parkhurst, superintendent.

VI.—BLAST FURNACES AND REFINERIES

Blast Furnaces

Algoma Steel Corporation.—The three furnaces of the above company situated at Steelton, Ont., were operated to capacity during 1916. The output ranged from 950 to 1,050 tons daily of pig iron. The Magpie and Helen mines of the company supplied about 30 per cent. of the ores used and the remainder was imported from the United States. James H. Bell is superintendent; 300 men were employed. A 100-ton Greenawaldt sintering plant was put in operation by the above company, in July, 1916. Flue dust from the blast furnaces was treated here during the balance of the year. Later on it is planned to treat residue from the acid plant and tailings from the Helen mine concentrator. The installation consists of two 7 ft. by 12 ft. roasting pans with mixing bins, loaders, burners, draft fans, etc. J. Frater Taylor is superintendent: 16 men were employed.

Canadian Furnace Company.—The blast furnace of this company, Port Colborne, which has been fully described in previous reports, ran to capacity during 1916, with the exception of a shut-down from April 1st to May 16th, while the furnace was being re-lined.

During the year a new machine shop was erected, and new blowing engine unit installed. Many changes and repairs were made with a view to rendering working conditions as safe as possible.

B. Marron, Buffalo, is president of the company; F. E. Deschenes, superintendent; and D. J. Higgins, mechanical superintendent; 135 men were employed at this plant during the year.

Standard Blast Furnace.—The blast furnace at Deseronto, owned by the Standard Iron Company, was operated continuously throughout 1916. The Parry

Sound furnace remained closed. Charcoal pig is produced at Deseronto, chiefly from Mesabi range ores, although some experiments have been carried on with a view to using Ontario magnetites. The company shared in the increased business due to war orders.

The officers of the company are: R. J. Mercur, president; S. F. Belknap, managing director; O. O. Landig, works superintendent; 70 men were employed during the year.

Steel Company of Canada.—The two large furnaces operated by this company at Hamilton were in blast continually during 1916, with the exception of short periods, when shut-downs had to be made for re-lining and repairs.

The whole force of the company was directed towards increased output for munition purposes.

The safety rules mentioned in last annual report were approved by the Compensation Board, and an Inspector appointed by the Metal Trades Safety Association. Results of this step are shown in the decreased accidents around the furnaces during the year.

Robert Hobson is president of the company; R. G. Wells, general superintendent, and Charles Grimes, superintendent of blast furnace.

Refineries

Coniagas Reduction Company.—The silver smelter and refinery operated by this company near Thorold worked to capacity throughout the year. Most of the ore treated came from the Coniagas mine owned by the company, but custom ores and mill products are also purchased.

The officers are: R. W. Leonard, president and general manager; R. L. Peek, superintendent; J. J. Mackan, secretary; 150 men are employed.

Deloro Smelting and Refining Company, Limited.—The plant and sampling and refining methods employed by this company at its silver refinery situated at Deloro, Hastings county, were fully described in the 25th annual report of the Bureau. The output of stellite was considerably increased in 1916. This new cutting metal, composed of cobalt, chromium and tungsten without any iron, has had much success, and for many operations has proved superior to high speed steel. Cobalt and nickel metals are now supplied to the trade in the form of grain, cube, shot and ingot. A plant was installed during the year for powdering aluminum metal in the form of dust. A considerable quantity of this material is used at Deloro as a precipitant.

Other changes during 1916 included the installation of a complete sprinkler system with tanks over all buildings. Twelve well designed houses for workmen were also built near the works.

The officers of the company are: M. J. O'Brien, president; Thomas Southworth, vice-president; S. B. Wright, general manager; S. F. Kirkpatrick, consulting metallurgist, and F. A. Bapty, secretary-treasurer. Two hundred men were employed during the year.

Electro-Zinc Company, Limited.—The plant erected by this company at Welland, for the production of electrolytic zinc spelter, operated most of the year.

Concentrates from the mine at Notre Dame des Anges, Portneuf county, Quebec, were treated.

The plant was designed by E. Watts, who invented the process of refining. On the date of inspection, 11th July, 1916, 50 electrolytic cells were in operation, and it was the intention to increase the cell capacity.

In the plant are one Abbe ball mill, one vacuum pump, one tilting furnace, one filter tank, four storage tanks, two agitator tanks and one sump tank.

The officers of the company are: Weston Lewis, president; L. D. Adams, vice-president; J. P. Wells, secretary; J. H. Maxey, treasurer. The secretary's office is at Sherbrooke, Quebec, and the treasurer's office at Gardiner, Maine, U.S.A.

Kingston Smelting Company, Limited.—This company was organized in October, 1916, and took over the lead mine at Perth Road and smelter at Kingston from the trustees of the North American Smelting Company, on a five year lease with option to purchase.

The mine was sub-leased to the Indian Lake Mining Company, but no work was done during the year. The smelter at Kingston has been repaired and extensive alterations made, particularly in the bag house and power departments. Several cars of lead concentrates from Missouri and British Columbia have been smelted. It is the intention of the company to assist wherever possible in the production of domestic ores in order to secure a steady supply for their furnaces.

The smelting plant consists of two Root blowers, two Scotch hearths, one blast furnace, one refining settler, reverberatory furnaces and bag house.

The officers of the company are: Hugh Sutherland, Winnipeg, president; E. M. Cromwell, New York, vice-president; G. W. R. Fallon, New York, secretary-treasurer; A. McKinnon, Kingston, general manager; 10 men were employed in February, 1917.

Metals Chemical, Limited.—The plant operated by this company at Welland worked to capacity throughout the year. The method of treatment was fully described in the 25th annual report of the Bureau. Low-grade cobalt ores and residues are purchased, and a variety of the chemical compounds of cobalt and nickel manufactured. There is also a considerable output of metallic cobalt, and nickel.

C. G. Richardson, Welland, is president of the company and J. H. Charles, secretary. Sixty men are employed.

Tivani Steel Company.—The process in use at this plant in Belleville was fully described in the 23rd annual report of the Bureau. The plant was idle for some time; in 1916, some additions were made and the manufacture of tool steel in the electric furnace resumed. A high-grade steel is produced directly from the titaniferous iron ores from the Orton mine in Hastings county. This work was suspended in the fall of 1916, and the furnaces used for manufacturing ferro-molybdenum for munition purposes. With a suitable concentrate a high-grade product is obtained, and it is probable that the plant will be enlarged in 1917 and more furnaces added to meet the heavy demand for the ferro compounds of tungsten and molybdenum.

J. Walter Evans is president of the company and J. M. Wallace, secretary.

LONG LAKE GOLD MINE, SUDBURY DISTRICT

By

M. B. BAKER

Introduction

The writer was deputed by the Bureau of Mines of Ontario to investigate, during the summer of 1916, certain mineral deposits in northern Ontario. He was instructed to make a detailed examination of the Long Lake gold mine, southwest of Sudbury, and to map the immediate vicinity geologically. He was then to proceed to the northern part of the Timiskaming mining division, and examine the Alexo nickel mine, and then investigate the economic possibilities of other serpentine areas for nickel, chromium, asbestos, etc. The serious forest fires, which raged over this northern area during the summer, interfered with his work, but it is hoped that the information set forth in the following report will be of importance to prospectors in this district.

The writer was assisted by A. W. Wheatley, a student of the University of Toronto, and wishes to thank Mr. Wheatley for faithful and valuable aid throughout the field season. He desires to acknowledge the kindness of the Canadian Exploration Company and its manager, R. W. Brigstocke, for access to all information at Long Lake mine, and for accommodation granted to himself and assistant while working in this area. He also wishes to thank Major Pullen and Mr. Anderson for similar kindness shown at the Alexo Nickel mine, and Dan O'Connor for information and aid in examining serpentine areas which he was investigating.

Long Lake Gold Mine

The Sudbury district has long been known as Canada's richest producer of metalliferous ores. These are chiefly ores of nickel and copper with a few rare associated metals like platinum and palladium, so that the discovery of a gold deposit of economic value was interesting. It was purchased by the Canadian Exploration Company and developed under the management of R. W. Brigstocke, who mined approximately 200,000 tons of ore averaging about eight dollars per ton in gold.

Long Lake settlement is six miles due south of Sudbury, and marks the northeast end of a lake nine miles in length and in few places more than half a mile in width. This lake lies in the northeast and southwest depression conforming to the rock structure of the country. The mine is located near the southwest end of the lake, and is best reached by a wagon road from Naughton, the first station west of Copper Cliff on the Canadian Pacific railway. A drive of ten miles through the Whitefish Lake Indian Reserve brings one to the mine, which is situated on a group of hills overlooking the lake and much of the surrounding country.

South of the Canadian Pacific railway there has been little detailed mapping done. In his map of the Sudbury nickel region to accompany a report on that

locality,[1] Dr. Coleman maps the area as far south as Timber Berth No. 69. The geology of this area has never been worked out, and as Long Lake gold mine lies within it, the early part of the field season was spent on this work by the writer. The accompanying sketch map in black and white shows the general geological features.

The rocks are entirely pre-Cambrian in age, and show the rounded and peneplaned topography characteristic of pre-Cambrian areas in Canada. The outstanding feature of this group is the northeast and southwest structural relationships. It is most significant that the pre-Cambrian almost everywhere in Canada shows this character. The strike of the formations, the elongated axes of intrusives, the crests of the ridges, the drainage basins, the lakes and marshes all testify to the northeast and southwest structural features so regularly met with in all parts of Canada occupied by these rocks.

Age Relationships of Rocks

The age relationships of the rocks present in this area are in descending order as follows:—

POST-LAURENTIAN.....	KEWEENAWAN:—Trap Dikes and Diabases. *Eruptive contact.* ALGOMAN:—Granites with Pegmatite Dikes. *Eruptive contact.* PRE-ALGOMAN:—Diorites with Gabbroic Facies. *Eruptive contact.* TIMISKAMING SERIES:—Quartzite, Arkose, Greywacké, and Conglomerate.

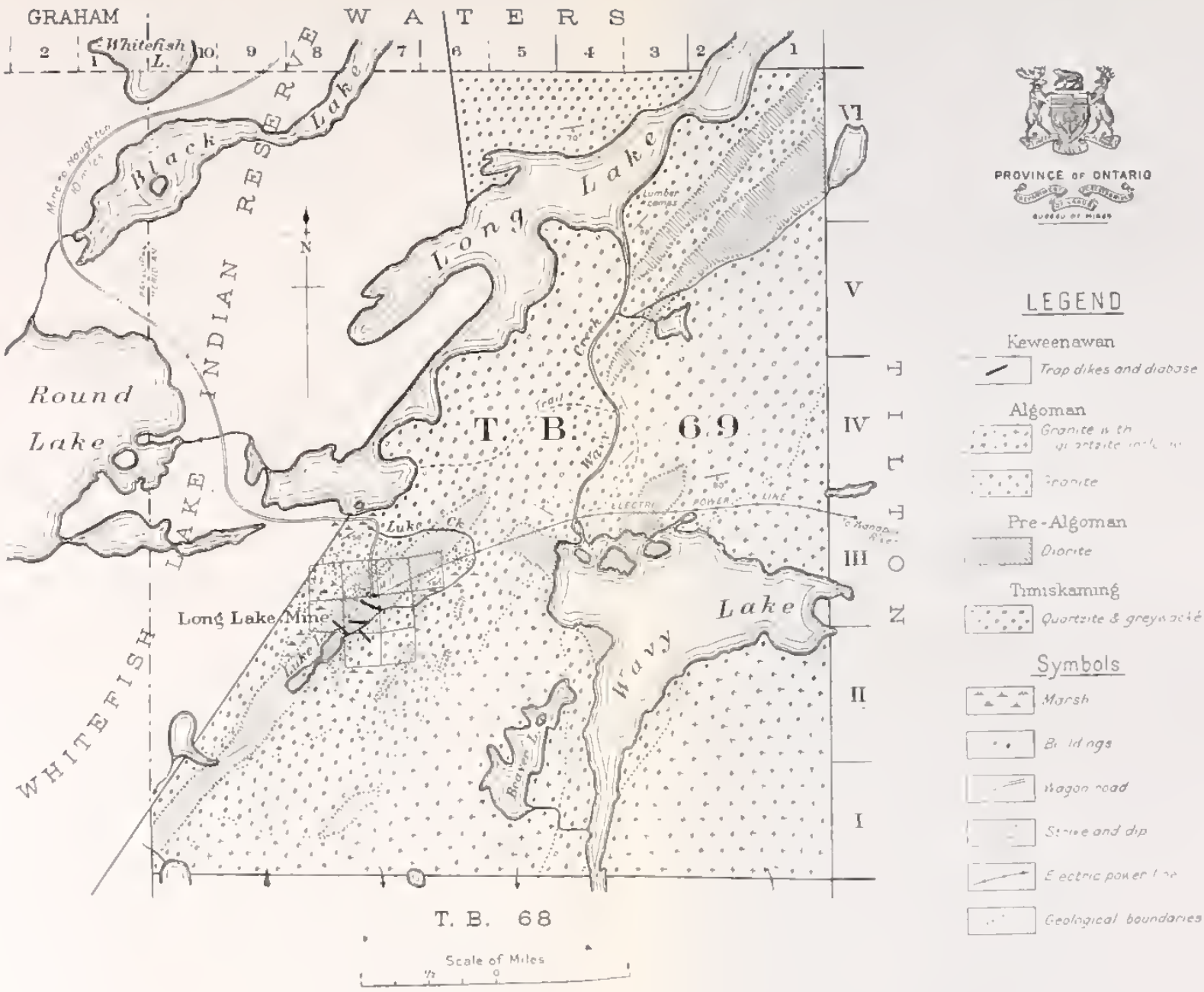
Timiskaming Series

The oldest group in this district is a series of metamorphosed sediments represented for the most part by quartzites, but with considerable amounts of arkose and greywacké, and subordinate amounts of conglomerate. All have a predominantly northeast and southwest strike, and very steep dips, mostly towards the southeast. There are many local deviations from this in the vicinity of later intrusions, but on the whole this is the prevailing structure, and is well brought out in the maps which accompany this report. The rocks have a pronounced pinkish shade and contain considerable feldspar, so that they are readily taken for granites or other acidic igneous rocks. Their bedding is quite prominent in places, and their perfect interlayering with greywacké and conglomerates precludes any but a sedimentary origin for them.

The greywacké is of variable character, but consists of prominent layers of quartz or gritty fragments, in a somewhat softer ground-mass of dark grayish-green grains, causing differential weathering, so that a ribbed or corrugated surface is produced parallel to the bedding. In some places the beds are slaty in character, and these dark bands serve well in tracing out the structures of the group as a whole.

The most prominent member of this group is the quartzite, which occurs in thick beds with distinctly sedimentary structures, even to crossbedding in places. Even the cleanest of the quartzite shows the presence of some feldspar grains.

[1] The Nickel Industry, Bull. No. 170, Dept. of Mines, Ottawa, 1912.



PLAN SHOWING GENERAL GEOLOGY IN VICINITY OF LONG LAKE GOLD MINE, SUDBURY DISTRICT.

when examined under the microscope. The feldspars are partly microcline, and partly albite or oligoclase.

Very little conglomerate is to be found in this district, but a few bands do occur. A striking occurrence is at the mouth of Wavy creek on the east shore, where there is a band of conglomerate with boulders six inches or more in diameter. This band strikes northeast with the general strike of the country, and dips at 56° to the southeast. Many of the boulders are granite, much altered, and show gneissic textures. They are no doubt remnants of Laurentian granite, and serve with other evidence to confirm the belief that the Sudbury series and the Timiskaming series are one and the same. Narrow bands of conglomerate may also be seen in front of the stable at Long Lake mine.

Pre-Algoman

Later than the sedimentary rocks just described, but earlier than the Algoman granite, is a series of diorites, which cut the Timiskaming series and enclose many fragments of it. Many of these included masses of quartzite and arkose are so much indurated and silicified by this intrusion as to have become dense and hard, even jasperoidal in character. Under the microscope these diorites are seen to be made up of common green hornblende and long lath-like crystals of plagioclase. In some places the latter appear almost like phenocrysts, giving the rock somewhat the aspect of a porphyry; but it is strictly an intrusive plutonic rock, and is a diorite.

These masses have an elongated shape controlled by the bedding of the Timiskaming series; their distribution and shape are shown on the accompanying map. The diorite is clearly later in age than the Timiskaming series, since it penetrates it, and holds large and small masses of these sediments as inclusions in itself. The ore body is confined to one of these large blocks of arkose, entirely surrounded by diorite. The relationship is best shown on the large scale map (No. 26e) of the mining claims, which accompanies this report, and which shows the detailed geology.

That the diorite is pre-Algoman, or at least early Algoman, in age, is clear, since fresh pink granite cuts the diorite in places, and in others, contains digested masses of it, which are very like pink syenites, and might easily be mistaken for the latter rock. The enlarged map shows in an interesting manner how large masses of the Timiskaming series were torn off and carried away from their natural position, as for example on claims S. 1100 and W.D. 601 and 602.

Algoman

Recent work on the pre-Cambrian rocks of Canada has shown that almost everywhere there is a second series of intrusive granites of widespread dimensions, formerly confused with the Laurentian. It is pointed out above that the Timiskaming conglomerates contain boulders of pink granite and granite gneiss, which must be of earlier age. On the other hand, the Timiskaming series is cut by another intrusive of pink granite, often gneissoid, clearly of later age, and to this later series the name Algoman has been given, and is being generally accepted.

In the Long Lake area the Algoman granites cut both the Timiskaming sediments, and the diorites just described, and contain fragments of both in many places. This feature is indicated on the maps with this report, but the smaller inclusions are not to scale, nor do they purport to be accurately placed. The intention of the writer is to indicate a mixed area south of the mine. An interesting feature is shown on the large scale map (No. 26e) of mining claims W.D. 601 and 602, where the Timiskaming sediments formerly continuous to the northeast have been broken up and displaced. The belt at the southeast corner of W.D. 602 is bent to the east through an angle of 35°, while the mass in the northwest corner of W.D. 601 has been forced out of the strike of the former belt.

The introduction of the Algoman was accompanied by much silicification of the surrounding rocks, hence fractures formed in the Timiskaming series, in the diorites, and even in the Algoman granite itself, are healed up with quartz. This is strikingly shown at the angle of bending in the southeast corner of W.D. 602, where the much fractured quartzite is impregnated with quartz veinlets, which completely closed up the fractures.

The Algoman granite is a coarse grained rock composed of pink orthoclase and microcline, with bluish to milky colored quartz. Biotite is often present, and sometimes hornblende. The rocks are noticeably red, coarse grained, and fresh in appearance. Along the margins of masses there is sometimes a well developed gneissoid structure, which appears to be due to the alignment of constituents along the contact, as a sort of false flow structure, rather than to dynamical forces. This gneissic structure, in the absence of other evidence, often causes Algoman rocks to be mistaken for Laurentian gneisses.

Keweenawan

Later still than the Algoman granites, and cutting them, as well as all earlier rocks, is a group of diabase dikes, which usually cut across the general northeast and southwest structure of the country. These dikes vary in width from a few inches up to thirty-five feet. In other parts of Ontario a thick series of sediments which overlies the Algoman rocks unconformably, is cut by similar dikes, and its age is therefore known. In this area, however, no such sedimentary rocks occur. It can only be said, therefore, that these dikes are post-Algoman in age, but their perfect similarity in composition and texture seems to justify their correlation with the proven Keweenawan of other areas. Microscopic examination shows them to be mostly augite diabase, with lath-like crystals of basic feldspar, penetrating and often surrounded by the augite. Their texture is therefore the same as that in the proven areas of Keweenawan in other parts of Ontario. They are remarkably fresh and undecomposed and are the youngest of the pre-Cambrian rocks of this area.

Ore Deposition

In the description of the pre-Algoman diorite given above, it is mentioned that large blocks and masses of the Timiskaming series are included in the diorite, and that the Long Lake mine is located in one of these blocks. The ore body is unique, as there is no vein or ore-filled space of any dimensions, but merely a core or chimney of Timiskaming quartzite impregnated with arsenopyrite and

iron pyrite, and minor amounts of pyrrhotite, galena, and copper pyrites. The gold is associated chiefly with the arsenopyrite, but the iron pyrites also carries smaller percentages of it.

There is a noticeable increase in gold values with increase of feldspar in portions of the quartzite. This leads to the miners' terms "red ore," "blue ore," "brown ore," etc. The red tones are due to predominance of feldspar, the blue to finely disseminated arsenopyrite in the quartz, the brown ore to the dust-like arsenopyrite in the feldspar. The brown ore is consequently the richest. The arsenopyrite is rarely in crystals visible to the naked eye, whereas the pyrite occurs in two forms. There is one generation of pyrite in easily recognizable crystals, while a second generation is in fine dust-like particles similar in dimensions to the arsenopyrite. The gold is associated with the fine grained arsenopyrite and pyrite, and not with the coarser variety.

In the discussion on the Algoman intrusives, it is stated above that the end phase of the action was accompanied by much silification, and that mineralizers affected the contacts considerably. Amongst all this mineralization, however, of which there are abundant examples throughout the area, there is no case that has proven gold-bearing. Small quartz veins even cut the ore body itself, but show no mineralization. While the Algoman intrusive produced much silicification, it did not produce the gold-bearing sulphides. These were of earlier age.

The probable source of the ore was the diorite which surrounds the masses of quartzite. Hydrothermal solutions would introduce the silica, the sulphides, the gold itself, and would deposit these in the pore spaces of the arkose mass, showing a preference for the parts richer in feldspar. It is significant, however, that other masses of Timiskaming sediments, similarly enclosed in diorite, do not show similar effects, but this may be due to their being quartzite, rather than feldspar-holding arkose. The writer would mention finding a large boulder of quartzite east of Wavy lake, which was well impregnated with sulphides, but assayed only eighty cents per ton in gold. As this mass could not have come from Long Lake mine, there must be other occurrences of possibly economic value.

While the diorite is pre-Algoman in the sense that it is cut by the Algoman granite, it is doubtful whether it is much older than the latter rock. It may mark merely the opening phases of the Algoman activity, and be therefore almost contemporaneous with the granite intrusions. Small quartz stringers which cut the quartzite, and others which cut the diorite, even adjoining the ore body, while showing coarse grained pyrites, do not carry gold, so it seems clear that the ore deposition accompanied the earlier diorite activity, and not the later granite intrusions. The gold is so closely associated with the sulphides that free milling proved a failure, and cyanidation is used throughout the process, actually being introduced in the stamp-batteries, and carried throughout the ball mills, agitators, etc., to the filter presses. By this means the manager has succeeded in getting a very complete extraction of gold from this refractory ore.

Faulting

Post-Keweenawan faulting of a most interesting and important character has taken place in the immediate vicinity of the mine. At least two fault planes

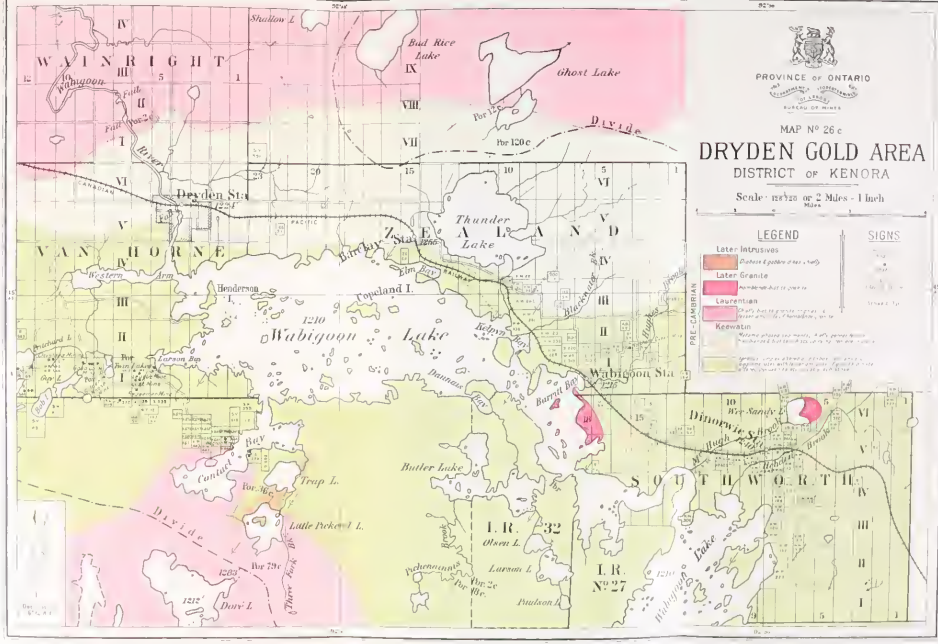
are well shown on the large scale map of the mining claims. One fault begins in Luke lake, and strikes northeastward across claims W.D. 602 and S. 1100. This fault is marked by a pronounced ravine, with prominent fault scarp on the southeast side especially. This fault at the ore body on W.D. 602 dips at 45° to the east at the surface, and starts in diorite, but about forty feet down it meets the quartzite, and there straightens up to about 70°, and follows the contact downward to and beyond the bottom of the quartzite mass. This being the case, the presence of the fault has no effect on the continuation of the ore body, as the contact would cut off the ore quite independently of the fault. This was the opinion expressed by the writer at the time of his visit, and extensive subsequent diamond drilling appears to have confirmed it.

It will be noticed by referring to the detailed structural map (No. 26 E.) that a large diabase dike "A" on claim S. 1128 strikes southeast and meets the fault on its western side. The continuation of this dike is on claim W.D. 602 showing a heave, along the fault, of 110 feet. Similarly dikes "B" and "C" on claim W.D. 602 have no continuation to the northwest across the fault. A careful search for these lost ends fails to show them, although a very small portion of a diabase dike does occur in the hanging wall across from "C" and with a similar displacement of 110 feet. Its strike is, however, northeast and southwest, and the writer is not sure that it is the same as dike "C." No continuation of dike "B" could be seen to the west, but a heavy overburden of soil at this point could very well have hidden it.

Prominent striations and gouges on the fault walls at the second and third level in the mine, show that relatively to the hanging or east wall, the opposite wall moved downward and southward at an angle of about 70° to the horizontal. A few remnants of "drag ore" on the fault plane at the second and third level add strong evidence to the support of this view. The writer would repeat, however, that this does not mean a continuation of the ore body below the fault plane, but that the ore bodies continued down to the contact of the quartzite with the diorite, and when the faulting occurred along this contact, it simply dragged or left behind remnants of ore along the fault plane.

A second fault starts also in Luke lake, and strikes eastward along the course of Luke creek, leaving a high escarpment on the south side of the fault. Following dike "A," the writer found it continued on the southeast side of this fault, and showing on claim W.D. 601 with a heave of 125 feet. The dike marked "B" is similarly displaced, and continued southeast of the fault as shown on the map. The continuation of dike "C" could not be located across the fault. This detail shows that relatively to the main mass south of the second fault, the area marked W.D. 602 moved southwestward, and that relatively to this mass, the hanging wall side of the first fault moved still farther southwestward. Other minor faulting occurs in the vicinity, but these two faults are the most important.

To accompany Report by E. Thomson, in Vol. 26, Part I, of the Ontario Bureau of Mines, 1917.



DRYDEN GOLD AREA

By

ELLIS THOMSON

Introduction

Acting on instructions received from T. W. Gibson, Deputy Minister of Mines, the writer spent the months of June, July, and August, 1916, in the vicinity of Wabigoon lake, Kenora district, in geological field work. From the data collected at that time a map has been made showing the various geological formations. Special attention had been directed to this region by a recent discovery of gold ore at Contact bay, a large bay in the southwest corner of Wabigoon lake. On this account a considerable portion of the time was spent in the immediate neighbourhood. The writer was particularly fortunate in having as his assistant, H. V. Ellsworth, whose services proved invaluable throughout the summer. He is also indebted to Dr. Ellsworth since that time for many helpful suggestions in the compiling of this report. During the months of July and August, Charles W. Merrill, of Wabigoon, rendered efficient service as canoeman and cook, while for a special trip to Gull lake in the month of August, C. D. Coates, of Dryden, proved a satisfactory guide.

This area is included in the general geological map by Wm. McInnes[1], but apart from the report by A. L. Parsons in the 20th Report of the Bureau of Mines,[2] no detailed work has been done in the field. A small part of the northern portion is also shown in map No. 1061 by W. H. Collins[3]. The stretch of country examined includes the townships of Wainright, Van Horne, Zealand, and Southworth, as well as a considerable section of the unsurveyed territory south of Lake Wabigoon.

Topography

The topography of the area is characterized by smooth and undulating surfaces, Fig. 1, particularly in the northern section, but occasionally bold and rugged hills protrude above the general contours, as in the vicinity of Trap lake. The northern half, including the townships of Wainright and Zealand and the northern half of Van Horne, is covered with a heavy overburden of white clay, on which are many prosperous farms, and few rock outcrops are to be seen. This northern section has been largely cleared, only the eastern part of Zealand township being still wooded. On the other hand, the southern portion of the field is covered with a fairly dense growth of poplar and birch, with an occasional evergreen, and here rock outcrops are fairly numerous. The whole tract, however, carries a considerable overburden of stratified clay, well illustrated on the shores of Wabigoon lake, Fig. 2. This lake is characterized by a low-lying shore-line with banks of white clay, which material comes down to water-level or within a few feet of it.

[1] Map No. 720, District of Rainy River, Manitou Lake Sheet, Can. Geol. Sur., 1902.
[2] Gold-fields of the Lake of the Woods, Manitou, and Dryden, Ont., Bur. Mines, 1911.
[3] Map accompanying Geological Reconnaissance of National Transcontinental Railway between Lake Nipigon and Clay lake, Ont., Can. Geol. Sur., 1909.

These clay banks being easily cut away by the action of the waves, the outline of the lake changes considerably even in the course of a year, and many small islands disappear, while new ones are formed by cutting off the ends of peninsulas and points. In Fig. 3 is shown one small island which has very nearly been cut

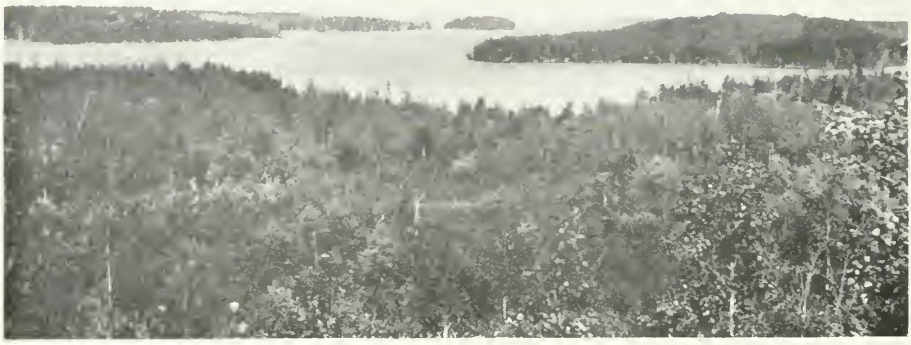


Fig. 1.—View of Larson bay, Wabigoon lake, showing flat topography.

Fig. 2.—Stratified clay, Anderson island, Wabigoon lake.

in two in this way. Erosion is hastened by the fact that the level of the lake has been raised at different times by the Dryden Timber and Power Company to facilitate logging operations.

Geology

The rocks are for the most part Keewatin in age, but a considerable area of Laurentian rocks occurs to the north, as well as a smaller one in the southwest corner in the vicinity of Contact bay. There are also a few small outcrops of later granite, gabbro, and diabase scattered throughout the field.

The classification is as follows:

1. Pleistocene deposits:—stratified clay, glacial and recent.
2. Later diabase and gabbro dikes, probably Keweenawan in age.
3. Later granite:—hornblende-biotite granite, probably Algoman.
4. Laurentian:—biotite granite or gneiss for the most part, also a little hornblende granite.
5. Keewatin:—(a) Igneous complex—volcanics acid to basic, agglomerates, pyroxenite, etc.
   (b) Metamorphosed sediments—iron formation, garnetiferous hornblende and biotite schists carrying magnetite and pyrrhotite in places.

Fig. 3.—Weathered island, Contact bay.

Pleistocene Deposits

As has already been mentioned, the rocks are covered in a great many places by deposits of stratified clay. Occasionally a layer of sand or gravel appears, but the great bulk of the Pleistocene deposits is made up of a white clay, well stratified. This material is best shown along the shores of Lake Wabigoon, where it sometimes attains a thickness of fifteen or twenty feet. It has been found eminently suitable for the cultivation of clover. This crop is threshed for the seed, which is reputed to be the finest on the continent, and commands the highest prices. Immediately below the clay deposits, more particularly on the shores of the lakes, a great many flat rock outcrops have been recently uncovered. Wherever this is the case, glacial markings are very numerous, the direction being S 28° W magnetic, with occasional local variations to southwest or south. These glacial striæ were encountered chiefly on Wabigoon, Little Wabigoon, Trap, and Butler lakes, but in one or two cases they were observed inland, notably in the vicinity of the Good Luck property in the southern part of Van Horne, where deep grooves appear in the agglomerate rock.

Keewatin Igneous Complex

This series, which forms the great bulk of the rock in the area, is made up chiefly of volcanic varieties, but there are some small areas of coarse-grained plutonic rocks. The volcanics range in composition from a rhyolite or quartz porphyry, to an altered diabase or basalt, and the corresponding schists. That these rocks are surface flows is abundantly illustrated by the great number of porphyritic, amygdaloidal, vesicular, ellipsoidal, and ophitic structures encountered in them in all parts of the field, not to mention the occasional occurrence of small tufaceous areas. The more acid rocks have a marked tendency to be porphyritic, while the more basic ones are generally either amygdaloidal or ophitic

Fig. 4.—Keewatin basic and acid flows, lot 6, concession 1, Van Horne township.

in structure. Nearly all these rocks, and in particular the basic ones, have developed a more or less pronounced schistosity, the general direction of the strike being east and west and the dip, for the most part, vertical. In places the altered diabases pass gradually into quartz diorites or altered pyroxenites, but these seem to be local plutonic phases only, and never occur in large areas. Accompanying these volcanics are numerous areas of volcanic breccias or agglomerates, varying in dimension from a few square feet to a square mile or so. These fragmentals are made up of angular fragments of the neighboring rocks, generally rather basic in composition, cemented together by a somewhat more acid material. A great

many of the rocks of this series have been so much altered and metamorphosed that their original character is entirely lost, and in this rather nondescript class are found such rocks as felsite, felsite schist, sericite schist, biotite schist, talc schist, and calc schist. As these rocks have only a local importance, and are surrounded by rocks of undoubted volcanic origin, it seems quite safe to assume that they are part of the same series. This formation has been sub-divided by both Wm. McInnes and A. L. Parsons in their maps of this country. However, as there is such a bewildering confusion of acid, basic, and fragmental rocks in this series, it has been considered inadvisable by the writer to attempt at present further sub-division. The extreme complexity of the acid and basic flows is well illustrated in the country immediately west of Larson bay in the southern part of Van Horne township. Here bands of acid and basic volcanics alternate in a few yards. In this particular locality as the contacts between the acid and basic flows, Fig. 4, are well marked, it would appear that the flows were not quite contemporaneous. In all other parts of the field, the acid rocks merge into the basic ones so gradually, that they would both seem to be part of the same effusion. This formation carries numerous veins, which for the most part follow the strike of the rocks, but occasionally cut across it. The gangue of these veins is usually white quartz, but occasionally includes ankerite, chlorite, and tourmaline. In conclusion, it may be stated that the three prominent rock types of this series are the quartz porphyries or dacites, the altered diabases and basalts and their corresponding schists, and the agglomerates.

Keewatin Igneous Rocks in Van Horne Township

These rocks take up about 15 per cent. of the area of this township, extending from the southern boundary to within a mile and a half or two miles of the northern boundary. Along the contact between this series and the metamorphosed Keewatin sediments in the northern part of the township, this formation seems to be represented almost invariably by a quartz porphyry or dacite, an exception being at the good contact on the east bank of the Wabigoon river, where the schists of the sedimentary series are in contact with an altered diabase schist. South from this contact the rock becomes more basic, particularly along the north shore of Wabigoon lake, and is represented for the most part by an altered diabase schist or diabase. This basic phase extends through concession IV, with, of course, small areas of the more acid rock included. Concessions II and III contain numerous areas of agglomerate mixed with both the acid and the basic rock types. This agglomerate is particularly well developed in the vicinity of Twin lakes, where it occurs in areas of several hundred square yards. It is also well shown in lot 4, concession III, along the shore of Wabigoon lake. The breccia, however, does not extend in a broad band across the country, as shown on previous maps, but is broken up into a great number of areas, most of them small, and is mixed up with the other rocks, both acid and basic. Concession I is taken up chiefly with alternating bands of acid and basic flows, the former predominating slightly, particularly towards the southern boundary of the township, with occasional small areas of agglomerate. These brecciated areas are more numerous in the western part of the concession in the neighborhood of Pritchard and Flambeau lakes, and also along the southern shore of Larson bay of Wabigoon lake, Fig. 5.

The rocks outcropping along the southern boundary of this township are for the most part acid, varying from a quartz porphyry to a felsite or felsite schist. The latter two are very fine-grained, and consist chiefly of quartz, orthoclase,

Fig. 5.—Keewatin agglomerate, south shore of Larson bay.

Fig. 6.—Banded Keewatin igneous rocks, Anderson island.

plagioclase, and sericite or chlorite. On Anderson island an altered diabase schist alternates with a more acid rock, Fig. 6, both being cut by numerous small veins of tourmalinized quartz. This peculiar vein-material resembles charcoal, having

the same fibrous appearance and with transverse fractures similar to the checks in charcoal. Associated with these two rocks on this island is a small area of altered pyroxenite, consisting chiefly of pale-coloured hornblende and a gray indefinite product. The same tourmalinized quartz was also encountered in another part of the township in lot 10, concession III, near the road from Dryden to the Redeemer mine. Amygdaloidal rocks are fairly plentiful in the southwestern corner of the township, and some vesicular structures were also found in this portion.

Keewatin Igneous Rocks in Zealand Township

This series in the western part of the township up to the western shore of Thunder lake, is confined entirely to a narrow fringe along the north shore of Wabigoon lake. The formation is represented in this western part chiefly by a quartz porphyry or dacite. Where, however, the fringe is wider, an altered diabase or diabase schist outcrops along the shore of Wabigoon lake. These rocks are for the most part quite schistose, striking east and west, and have a vertical dip. From here on to the eastern boundary of the township, the formation gradually broadens out, till at the eastern limit it extends from the middle of concession III to the southern boundary of the township. In the eastern section of the township it is represented for the most part by an altered diabase or basalt and corresponding schists. At the contact with the sedimentary series, it is almost invariably represented again by a quartz porphyry or dacite. This acid porphyritic rock is especially prominent at the point where the road between Dryden and Wabigoon crosses Thunder creek, which is the only place in this section where there is anything like a visible contact between this series and the sediments. Here the acid rock outcrops immediately below the bridge, while the sediments appear about 100 to 200 feet up the stream. This acid rock shows in thin section fairly large phenocrysts of quartz, as well as a few of both orthoclase and plagioclase in a fine-grained matrix consisting chiefly of quartz, biotite, and muscovite, with lesser quantities of epidote, magnetite, and apatite. In this rock most of the feldspar has apparently been leached from the ground-mass, but the porphyritic nature of it precludes the classing of it with the sediments. In a cutting on the Canadian Pacific railway track west of Wabigoon station, between mile posts 50 and 51, a peculiar pyritic graphite schist occurs along with the other rocks of this series. This is a very schistose rock, striking east and west, and with a vertical dip. It resembles an ancient slate, having very good slaty cleavage, and showing in thin section graphitic material, quartz, and pyrite. A good example of pillow lava occurs in this township just north of the town of Wabigoon, near the road between lots 6 and 7 in concession I. The rock is an altered diabase, and the pillows are very well marked, Fig. 7.

Keewatin Igneous Rocks in Southworth Township

This formation covers the whole of this township, and is for the most part basic in character, particularly to the north. The rocks along the small extent of the shore-line of Lake Wabigoon included in this township, are predominantly basic in character, being chiefly altered diabases or basalts and their corresponding

schists. In this stretch there is one mining claim, S.V. 2, concession V, lot 5, where a graphitic schist outcrops, carrying considerable pyrite. This rock, which is crumpled and contorted in places, is similar to that in the township of Zealand on the C.P.R. track west of Wabigoon. It covers in this case, however, a very small area, outcropping only for a few yards back from the present water level. About 50 feet from the shore the altered diabase or basalt rock outcrops. To the north the same basic phase of the series outcrops at infrequent intervals along the C.P.R. track. At points along the right-of-way, between Wabigoon and Dinorwic, the basic phase shows local variations to a coarser plutonic rock, grading into a quartz diorite. This coarse type is to be found outcropping a few yards east of Wabigoon station and again between mile posts 48 and 49 still further east. At the latter locality this rock in thin section shows a rather coarse aggrega-

Fig. 7.—Pillow lava, lot 6, concession 1, Zealand township.

tion of hornblende, quartz, and plagioclase, with lesser quantities of ilmenite and its alteration product, leucoxene. The plagioclases have been so much altered to kaolin that their exact character is difficult to determine accurately, but their extinction-angles correspond best to those of andesine. This coarse rock merges in a few yards into the usual fine-grained basic variety. The rocks in that portion of the township on the south side of the narrows between Wabigoon and Little Wabigoon lakes are much more acid in character, while those along the north and east shores of Little Wabigoon lake as far as the southern boundary of the township, show alternations of the acid and basic rocks in about equal proportions. The acid rocks are especially prominent on the long peninsula opposite concession II. At this point a very schistose quartz porphyry to felsite outcrops, striking S.S.W. magnetic and with a vertical dip. This outcrop is, however, only about 50 to 100 feet wide.

Keewatin Igneous Rocks in Other Parts of the Field

There remains that part of the field south of Lake Wabigoon, including the Trap lake and Butler lake sections, as well as the Contact bay region, and part of the west shore of Little Wabigoon lake.

In the Contact bay region the rocks representing this series are in contact with Laurentian rocks, and are chiefly acid in character. The most prominent rock type in this locality is a quartz porphyry or dacite porphyry, with small areas of agglomerate, Fig. 8, appearing at various points. Of minor importance are such rocks as altered diabase or basalt, and their corresponding schists, biotite schist, diorite, and altered pyroxenite. Peculiar amygdaloids were encountered in mining claim K. 680, containing prominent amygdules or eyes of quartz. These eyes, being more resistant than the remainder of the rock, protrude in very striking fashion. At the contact between the Keewatin and the Laurentian,

Fig. 8.—Keewatin agglomerate, K 674, Contact bay.

a diorite rock frequently appears between the two formations. This rock shows in thin section a coarse aggregation of hornblende and plagioclase, with lesser proportions of orthoclase, quartz, ilmenite, leucoxene, pyrite, apatite, chlorite, epidote, and limonite. Whether this rock should be put with the other rocks of this series or with the Laurentian rocks, seems somewhat doubtful. However, as it corresponds to the coarse phase of the basic types of the Keewatin, it seems safer to include it in this older series. It is in any case of no very great extent, nowhere being more than 100 feet wide. In this area has been included the small part of the west shore of Wabigoon lake extending from the narrows at the mouth of Contact bay to the south boundary of Van Horne township, the rocks along this stretch of shore being similar to those around the shores of Contact bay. The east shore of these narrows shows rocks of a more basic character, which extend for about a quarter of a mile in both directions from the narrows.

The rocks in the Trap lake section are similar to those at Contact bay, but here are in contact with a later gabbro dike as well as with the Laurentian rocks. Along the south shore of Wabigoon lake as far as Daunais bay the rocks are predominantly acid, with the exception of those outcropping on the large peninsula just west of Daunais bay, where a fairly extensive agglomerate area appears along the shore. The rocks inland are also decidedly acid in character. From Daunais bay along the same shore line to the narrows leading into Little Wabigoon lake, the rocks are for the most part basic in character, the most prominent rock types being altered diabases and basalts and their corresponding schists. A few local outcroppings of the coarse-grained altered pyroxenite appear, but these soon grade into the fine-grained volcanics. This is well shown at one particular point, where it was possible to see the gradation in a single outcrop. A few outcrops of such acid rocks as felsite schists, quartz porphyries, dacite porphyries, and biotite schists also occur. Along the portage from Wabigoon lake to Butler lake a good dacite porphyry occurs, showing in thin section large phenocrysts of quartz, somewhat smaller ones of plagioclase (andesine), and one or two of orthoclase, in a fine-grained matrix of quartz, feldspar, epidote, chlorite, and limonite. This is, however, only a small outcrop. Amygdaloidal rocks are fairly common, the amygdules being chiefly calcite.

The rocks of the series in the Butler lake section, which includes Butler lake and all its tributary lakes and streams, are for the most part basic volcanics. The commonest rock type here is an altered diabase or diabase schist, but areas of agglomerate are fairly numerous, more especially around the shores of Butler lake, Fig. 9, while a few small areas of more acid rocks are also to be found. These basic volcanics show coarse-grained plutonic phases at times, merging into quartz diorites or altered pyroxenites, but such phases are of mere local importance. Many of the rocks are porphyritic or amygdaloidal, while good examples of pillow lava are to be seen in one or two places, as at a point on the west shore of Larson lake, Fig. 10. Most of these rocks carry considerable pyrite, either in the form of small grains or in cubes of various sizes. The Keewatin rocks along the west shore of Little Wabigoon lake as far south as a point due west of the south boundary of the township of Southworth, are decidedly acid in character, being represented chiefly by quartz porphyries, felsites, and their corresponding schists. In general, it may be said of the Keewatin rocks in this part of the field south of Lake Wabigoon, that bands of iron-bearing rock outcrop at infrequent intervals, while most of the other rocks carry some pyrite or limonite.

Keewatin Metamorphosed Sediments

This formation is apparently a border phase of the Keewatin, and is represented by a band from one to five miles wide running roughly from east to west through the northern part of the field. It covers the northern part of Van Horne township, the southern part of Wainright township, and about two-thirds of the township of Zealand, and continues as well on through the neighbouring townships to the east and west beyond the limits of the map accompanying this report. The series, which is in contact with the Keewatin igneous rocks on the south and

Fig. 9.—Keewatin agglomerate, Butler lake.

Fig. 10.—Pillow lava, west shore of Larson lake.

the Laurentian granite on the north, is represented chiefly by hornblende and biotite schists, usually containing a great number of weathered garnet crystals.

A good part of the formation carries a fair amount of magnetite and pyrrhotite, this iron-bearing portion extending along the C.P.R. right-of-way from mile post 66 west of Dryden to the old Barclay station, and from there due east to the east shore of Thunder lake. Unfortunately the iron ore has not been concentrated in economic quantities. On account of this ferruginous band the series has been classed as an iron-formation, but there may be some doubt as to the correctness of this classification, since it differs from the iron-formations described from other localities.

These rocks have been subjected to so many changes that their original character is very difficult to ascertain. However, on account of the occurrence of such metamorphic minerals as garnet, staurolite, sillimanite, and tourmaline, not to mention the banded iron ore, and the fact that quartz is very plentiful while the feldspars are almost entirely absent, one is forced to the conclusion that they have been formed by the metamorphism of a mixed argillaceous and arenaceous sediment. A schist of this series from the vicinity of the pulp mill at Dryden, showed in thin section a laminated aggregation of quartz and biotite, with smaller proportions of magnetite, pyrite, tourmaline, orthoclase, plagioclase, garnet, sillimanite, and zircon, the last-named mineral appearing as tiny inclusions in the quartz crystals. Another schist outcropping along the C.P.R. right-of-way west of Dryden about halfway between mile posts 64 and 65, examined in thin section, consisted chiefly of quartz, hornblende, magnetite, pyrrhotite, and garnet, with apatite and plagioclase as rare constituents. Still another schist taken from lot 3, concession III, Zealand township, showed in thin section chiefly quartz, staurolite, and biotite, with some magnetite, tourmaline, plagioclase, and chlorite. Most of the rocks belonging to this series along the shores of Thunder lake carry much magnetite, pyrrhotite, and garnet. These schists in contact with the Laurentian rocks to the north, sometimes take on a more gneissoid character, as is shown by a rock from concession II, lot 5, Wainright township. This, examined in thin section, was found to consist chiefly of quartz, orthoclase, plagioclase, and biotite, with garnet and magnetite. Similar gneissoid rock was encountered in lot 6, concession I, and again in lot 3, concession I, in the township of Wainright. West of this in the Zealand addition, the regular biotite and hornblende schists are in contact with the Laurentian granite for several miles, the contact being visible in one or two places, while in others these schists outcrop right up to what is quite evidently granite country. It may be noted that the soil in Laurentian territory is for the most part quite sandy, while the overburden carried by the Keewatin sediments is largely white clay. Again, along the C.P.R. right-of-way west of Dryden, the hornblende and biotite schists outcrop fairly close to the Laurentian granite. From this it would appear that the gneissoid rocks are mere border phases of this formation, which are frequently lacking entirely at the Laurentian contact. The contact of this series with the Keewatin igneous rocks to the south was only seen at one place, although at other points the contact is hidden by but a few hundred feet, on the east bank of the Wabigoon river in lot 4, concession V, Van Horne township, about 100 yards north of the line

between concessions IV and V. The schists are cut by many small dikes of muscovite granite or pegmatite, which frequently carry numerous crystals of tourmaline and occasionally one of garnet. The tourmaline is black in colour, except in thin section, where it shows two colours, brown and blue, and is finely pleochroic. These dikes cut the schists in every direction, and vary from 50 or 100 feet to a few inches in width. They are probably outliers from the Laurentian granite, although differing markedly from that granite in composition. The schists vary in strike from N.E. and S.W. magnetic in the western part, to east and west in the eastern part. Their dip is for the most part vertical, although a local variation of 70° to the south was encountered at one point on the shore of Thunder lake. In places these schists have been crumpled and contorted, while in others the banding is very pronounced.

Laurentian

The Laurentian is represented in this field by two areas, one stretching across the northern part, and the other in the southwest corner. The northern area, which is the more extensive of the two, covers all but the southern part of the township of Wainright, the northern part of the Zealand addition, and the unsurveyed territory north and east of Bad Rice lake. Its contact with the Keewatin sediments is very irregular in outline, but runs roughly east and west. The formation is represented here by a typical biotite granite. This rock shows a very rough foliation in a few places, but is for the most part not at all gneissoid in character. A granite from lot 5, concession II, Wainright township, examined in thin section, consists chiefly of a coarse aggregation of quartz, orthoclase, plagioclase, biotite, muscovite, and epidote, with minor quantities of magnetite, apatite, and chlorite. In places small fragments of the Keewatin sediments are included in the granite some distance from the contact. In other places, as at a point just east of the eastern end of the line between concessions I and II, Wainright township, this granite is fresher in appearance, the feldspar being quite pink in colour. It also carries some garnet crystals. This northern area extends north of the boundaries of the accompanying map. The writer was able to see outcrops of this formation as far north as Gull lake, where it is in contact with the hornblende-biotite schist series. The pegmatite dikes, already mentioned as cutting these schists, are larger and much more numerous at this locality, but do not extend into the Laurentian granite.

The southern area of this formation appears in the Contact bay region, surrounding the western end of that bay, and extending over to Little Pickerel lake. The rocks are in contact here with both the Keewatin igneous rocks and a later gabbro dike, the latter along the shores of Little Pickerel lake. The contact with the Keewatin rocks is well shown on a small island in Contact bay called Contact island, Fig. 11, where the Laurentian granite is aplitic in texture. In thin section this aplite or quartz porphyry shows a great many phenocrysts of quartz as well as a few of both orthoclase and plagioclase, in a fine-grained matrix consisting chiefly of quartz and orthoclase, with hornblende pyrite, epidote, kaolin, and limonite. The contact is also shown in some of the mining locations west of the Rognon camp. This is the case along the western boundary of K. 644,

where the peculiar dioritic rock already mentioned occurs between these two formations. A Laurentian granite from a point west of the western end of Contact bay, examined in thin section, showed chiefly a coarse aggregation of quartz, microcline, orthoclase and albite, with biotite, muscovite, calcite, and apatite. This Laurentian-Keewatin contact is again seen at a point near the northeast corner of Little Pickerel lake, where a coarse granitic rock lies up against a fairly basic Keewatin rock. The granite, examined in thin section, consisted chiefly of quartz, orthoclase, albite, and hornblende, with minor quantities of epidote, apatite, and magnetite. The feldspars, the hornblende, and the magnetite have been altered in places to kaolin, chlorite, and limonite respectively. This rock appears to be a typical hornblende granite. Along the south and west shores of Little Pickerel lake this formation is again represented by the regular biotite granite. The contact between the Laurentian rocks and the later gabbro dike, outcropping around the shores of this lake, is unfortunately hidden by overburden.

Fig. 11.—Contact between Laurentian and Keewatin, Contact island, Contact bay.

Later Granite

This formation is represented by two comparatively small areas. One is in the northwest corner of Southworth township, and outcrops along the shore of Wabigoon lake in the vicinity of Wabigoon station, and also on one or two of the islands opposite this bit of shore. The area likewise extends for a very short distance into concession I of the township of Zealand. This outcrop is a mere fringe along the shore line, and does not cross the C.P.R. right-of-way as shown on a former map. No rock outcrops of any kind are to be seen on the section of track indicated, nor on that part of the Dinorwic road just beyond the track. This rock is found on several of the islands in the neighbourhood, the granite here appearing as small dikes in the Keewatin rocks, Fig. 12. Apparently, the dikes are small outliers from the main body. The contact between this granite and the Keewatin

rocks is shown on the mainland at both the north and south ends of the outcrop. The Keewatin here is quite basic in character. The granite is of the hornblende-biotite variety; a specimen in thin section showed a coarse aggregation of quartz, albite, orthoclase, microcline and epidote, with hornblende, biotite, apatite, and magnetite. It differs from the Laurentian granite in being much fresher in appearance, and also in containing considerable microcline. The feldspar is uniformly pink in colour, a fact which may be noted even from a distance.

The other smaller area of later granite outcrops around the east shore of Wee Sandy lake in Southworth township. It apparently consists of a fringe only, and does not appear to extend for any distance inland. The granite is similar to that on the shore of Wabigoon lake, except that it contains more hornblende and biotite. It also appears to be even less altered than the other granite.

Fig. 12.—Granite outliers in Keewatin rock, island in Wabigoon lake, west of concession 6, Southworth township.

Other Later Dikes

There are four of these dikes in all, three of them small. One of them is intermediate in character, the other three basic. At least two of them, and probably all four, are Keweenawan in age.

The first outcrops along the portage between Pritchard and Flambeau lakes in the southwest corner of Van Horne. This is a diabase dike about 200 yards long and about 200 feet wide. Near the west end the dike branches off into two or three smaller dikes. The dike rock shows in thin section a decidedly ophitic structure, with plagioclase (labradorite), pyroxene, and magnetite as the main constituents, and pyrrhotite, hornblende, and limonite present in minor quantities. Many of the pyroxene crystals have been altered to hornblende, either partially or completely, by a process of uralitization. The rock is comparatively coarse in texture, except at the contact with the surrounding rock, which is Kee-

watin agglomerate, where it is very dense but still retains its diabasic structure. The contact between the dike and the Keewatin rocks is very pronounced, as the dike rock is decidedly dark in tone, while the surrounding rocks are light in colour, Fig. 13. The dike, which is not at all schistose in character, strikes east and west. At various points along its length fragments of the Keewatin agglomerate are included in it, showing conclusively that the dike rock is younger than the agglomerate. It seems extremely likely that this dike is Keweenawan in age, as its petrographic characters are almost identical with rocks of this formation seen by the writer in other localities.

Another dike of exactly similar nature was encountered on the 18-chain portage on Pichenminnis creek, south of Butler lake. It also strikes east and

Fig. 13.—Contact between diabase dike and Keewatin agglomerate, southwest corner of Van Horne township.

west, outcrops for a distance of about a quarter of a mile, and is about 100 yards wide. In petrographic character it is identical with the dike in the neighbourhood of Flambeau lake.

A still larger dike was encountered on the shores of Trap and Little Pickerel lakes. It covers a considerable area, extending from the south end of Little Pickerel lake to the north end of Trap lake and beyond. Its general strike is north-northeast. The dike is basic, varying from an altered gabbro or norite to an altered pyroxenite or anorthosite. A thin section taken from the north shore of Little Pickerel lake showed chiefly highly chloritized hornblende, together with magnetite, calcite, serpentine, and limonite. Fluorite is a rare constituent.

of this rock, which appears to be an altered pyroxenite. Another thin section from the west shore of the same lake showed an ophitic mass of plagioclase (labradorite) and highly altered hornblende, with lesser quantities of pyroxene, pyrite, chlorite, epidote, and limonite. The hornblende has quite evidently been formed from the alteration of pyroxene crystals by the process of uralitization, as remains of the old pyroxene are to be seen in the centres of some of the crystals. The rock seems to be an altered diabase or gabbro. A third thin section taken from the north shore of Trap lake exhibited a coarse aggregation of plagioclase (labradorite) and enstatite, the former predominating. Small amounts of sericite and chlorite are also present in this rock, which appears to be a gabbro or norite. Still another specimen of this dike, from the east shore of Trap lake at the contact with the Keewatin rocks, consists almost entirely of plagioclase (labra-

Fig. 14.—Spheroidal weathering in basic dike, Little Pickerel lake.

dorite), with but minor quantities of magnetite, hornblende, epidote, chlorite, and limonite. This rock seems to be an anorthosite, and represents the acid extreme of the dike. The contact between the dike and the Keewatin rocks is shown in only two places. On the east shore of Trap lake the contact with the basic volcanics of the Keewatin is well shown, the latter outcropping beside the dike with a good line of demarcation between. A similar contact is seen at a point about a quarter of a mile west of the western shore of Little Pickerel lake, where the Keewatin is again represented by a basic volcanic. The contact between this dike and the Laurentian granite is unfortunately hidden by overburden. A peculiar form of spheroidal weathering is exhibited by the dike rock. This is particularly well shown on the large island in the middle of Little Pickerel lake, Fig. 14. Here the rock weathers to bomb-like spheres, which in the process become separated

from the remainder of the outcrop, so that the shores are strewn with them. On the north and west shores of Trap lake numerous small aplite dikes cut this later gabbro dike. They are very small, the largest being about two feet wide. A specimen taken from one of these dikes, and examined in thin section, presented an interesting micrographic intergrowth between the quartz and the feldspars. The rock consisted chiefly of a fine-grained aggregation of quartz, kaolinized feldspars, both orthoclase and plagioclase, and epidote, with some hornblende. These dikes probably represent an acid phase of the gabbro dike.

Still another dike appears on the north shore of Wabigoon lake on the peninsula on the west side of Barritt bay. It outcrops on both sides of the peninsula, strikes west-northwest, and is about 10 feet wide at its widest part. The rock is intermediate in character, corresponding best to a porphyritic biotite diorite. In thin section it shows large phenocrysts of plagioclase (andesine), in a fairly coarse matrix consisting chiefly of plagioclase and biotite, but containing also minor amounts of quartz, epidote, magnetite, and apatite. Calcite is a rare constituent. The dike is in contact with Keewatin rocks of basic composition. Beside these, there are several very small basic dikes in different parts of the field. They are so small that they cannot be mapped, but they deserve a passing mention. In composition they are very dense diabases, being similar in character to the border phase of the diabase dike in the neighbourhood of Flambeau lake. One of these dikes is on the east shore of Little Pickerel lake cutting Keewatin rocks, another at the northwest corner of Trap lake cutting the large basic dike. Still another outcrops on the east shore of Paulson lake, cutting basic Keewatin rocks at this point.

Veins and Vein Minerals

The veins in this region are confined almost entirely to the igneous division of the Keewatin formation, although a few occur also in Laurentian rocks. Quartz veins are to be found in these Keewatin rocks in almost any part of the field, but are particularly numerous in the vicinity of the Laurentian area in the southwest corner. This would seem to show that the granite played a prominent part in their deposition. For the most part the veins follow the direction of schistosity in the rocks, although occasionally they cut across it. They vary in width from a few inches to 20 feet or more. The vein material is largely white quartz, but ankerite, pyrite, and black tourmaline are quite plentiful, while chlorite, chalcopyrite, malachite, azurite, hematite, and native gold are rarer constituents. Black tourmaline is especially plentiful in the veins in the south part of Van Horne township, where it occurs in the quartz in the form of small needles. In some places in the western part of the field the quartz is heavily rusted with iron oxide, a good example of this being the vein material from the main Rognon vein on Contact bay. On mining location K. 641 the mineral covellite appears in a quartz vein associated with pyrite and chalcopyrite. The covellite forms a coating over the other sulphides.

Mining Properties

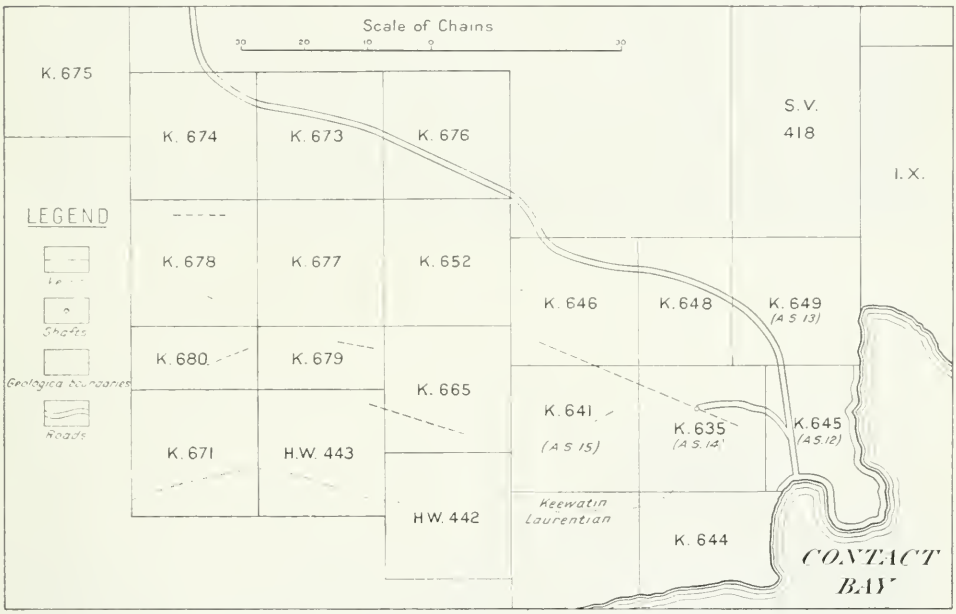
Under this heading will be included only those properties on which some work has been done in recent years. Most of the properties are situated in the western part of the field, although a few were opened up in the eastern section.

Redeemer Mine

Apart from an attempt to unwater the shaft in the summer of 1910, nothing has been done with this property in recent years. Fig. 15.

League Mine

This property has not been worked since the summer of 1914. There are three shafts, Nos. 1 and 2 in the north half of lot 6, concession I, and No. 3 in the



Sketch map showing mining locations and position of veins, northwest shore of Contact bay, Wabigoon lake.

north half of lot 5, concession I, Van Horne township. Nos. 1 and 2 have been sunk to a depth of 80 feet, and No. 3 to a depth of 20 feet. The latter is situated near the shore of Larson bay, and was sunk in the summer of 1914. The vein material shown on the dumps is the same at all three shafts, consisting chiefly of quartz, ankerite, tourmaline, and pyrite, with green mica and chalcopyrite. The country rock at all three shafts is a very dense felsite or quartz porphyry, considerably sheared and brecciated in places. No. 2 shaft is equipped with a 45 h.p. boiler, a small hoist, and a 1-stamp mill, while No. 3 shaft is equipped with a 12 h.p. boiler and a small hoist. The mine buidings, which are in charge of Messrs. A. Pitt and G. Larson, of Dryden, are in good condition, Fig. 16.

Good Luck Property

No further sinking has been done on this property since it was last reported upon, but tests were made for the Dominion Reduction Company during the summer of 1916.

Fig. 15.—Redeemer mine shaft and mill.

Fig. 16.—No. 3 shaft, League mine, Larson bay.

Other Properties in Van Horne Township

On the Lost mine, which is situated in the north 80 acres of the south half of lot 6, concession I, and which has been mentioned in previous reports, considerable additional stripping has been done between the two shafts.

On the old Drake property immediately adjoining the Good Luck property to the west in the northeast corner of lot 9, concession I, three shafts have been sunk along the line of the Good Luck vein. These are respectively, 52, 12, and 10 feet in depth. The vein material at all three shafts is quartz, ankerite, tourmaline, chlorite, and pyrite. Considerable stripping has also been done between the shafts.

In the northwest corner of mining location A.L. 88 on the shore of Flambeau lake in the southwest corner of the township, a small test-pit has been sunk on a stock-work of small veins, the vein material consisting of quartz, ankerite, pyrite, and tourmaline.

In the northeast corner of the adjoining location, A.L. 90, another test-pit has been sunk on the same material. The country rock at both these pits is an altered diabase schist.

North of this on mining location R. 544, near the shore of Pritchard lake, a test-pit has been sunk to a depth of about four feet in a dense felsitic rock containing numerous small quartz stringers, most of them following the strike of the rock, but some of them cutting across it. The quartz is impregnated with pyrite, and also contains small amounts of chalcopyrite, ankerite, and tourmaline.

In the same area, in the northern part of mining location H.W. 546, a test-pit has been sunk to a depth of about 8 feet on a banded felsite schist, carrying quartz, pyrite, and ankerite. On the claim immediately adjoining this last one to the east two other test-pits have been sunk, one about 10 feet deep on the same sort of material as on H.W. 546, the other three or four feet deep on a stock-work of small quartz veins, the whole mass of both veins and rock being impregnated with pyrite and containing as well small amounts of chalcopyrite, feldspar, tourmaline, and hematite. This stock-work has been traced for a width of about 30 feet and a length of 20 feet, some of the stringers following the strike of the rock, other cutting across it. The pit is said to have shown some gold values.

In the northeast corner of lot 11, concession I, two shafts have been sunk by the Cleveland Mining Company. The first of these, which is situated only a short distance from the corner post between lots 10 and 11, is about 20 feet deep, and has been sunk on a small vein three to six inches wide, consisting chiefly of quartz, ankerite, tourmaline, and pyrite. The country rock at this shaft is an altered diabase. This shaft is equipped with a small windlass. The other shaft on this property, which is situated about a quarter of a mile west of the first one, is 85 feet deep, and has been sunk on the same sort of material and in the same country rock. Several old mine buildings, including the remains of an old mill, are still standing near this shaft, but all the equipment has been removed.

Properties in the Vicinity of Contact Bay

These properties are situated, for the most part, on the west side of Contact bay in Keewatin rocks, close to the contact with the Laurentian granite. A few, however, are found in other parts of that immediate neighbourhood, one even adjoining the south boundary of Van Horne township.

Rognon Property (K 635)

This is the old mining location A.S. 14, situated on the north side of Contact bay, and is the property on which the gold discovery was made, that recently attracted attention to this area. The vein runs in a general way N. 68° W., starting near the eastern boundary of the claim and crossing it diagonally. It also continues across the northeast corner of K. 641 and on into K. 646. It follows in a general way the strike of the country rock, which is a biotite schist with a vertical dip. It varies in width from two feet to two inches, pinching and swelling alternately throughout its length. The vein material is a reddish quartz, highly impregnated with hematite, and occasionally carrying a little pyrite. At a point 642 feet from the west boundary of the claim, the distance being measured along the strike of the vein, a shaft has been sunk to a depth of 23 feet. Fig. 17. The vein here is one foot wide at the surface and one and a half feet wide at the bottom of the shaft. Two other test-pits have been sunk at other points along the vein, one seven feet and the other three or four feet deep. Stripping has also been done along the whole length of the vein on this property, as well as for some distance beyond its southeastern limit. In places the vein splits into several tiny stringers of quartz, with horses of country rock between. It was proposed to erect a 1-stamp mill in the vicinity of the vein for the purpose of testing the ore before putting up a more extensive plant. This, however, has not been done as yet. The shaft is equipped with a small windlass. The property is owned by E. G. Rognon, of Dryden. The mine buildings are situated on the adjoining claim K. 645 on the shore of Contact bay, Fig. 18. A description of this property has been given by James Bartlett.[1]

Other Properties Near Contact Bay

West of this last property is mining location K. 641 (A.S. 15). On this property a vein has been located striking N. 37° E. and dipping at an angle of 45° to the southeast, which cuts across the strike of the country rock. This vein, which has been stripped for a distance of 150 feet, has a uniform width of one and a half to two feet. The vein material is chiefly reddish quartz, but pyrite, covellite, and chalcopyrite are present in considerable quantities, the covellite forming a beautiful blue coating on the other sulphides. No gold values of any account were obtained.

The vein from the Rognon property (K. 635) continues through the northeast corner of K. 641 and on into K. 646, keeping to the same general direction. Stripping has been done along this continuation for a distance of 2,300 feet northwest from the point where the vein crosses the west boundary of K. 635, but the vein itself continues for only 1,600 feet of this distance. Only small isolated stringers occur beyond this point, which are not real continuations of the vein. This claim, K. 646, is owned by G. Larson and B. Stewart, of Dryden, and considerable assessment work was done on it during the summer of 1916.

Of the other claims in this group assessment work was done on K. 673, K. 674, K. 675, K. 677, K. 678, K. 679, and K. 680 during the summer of 1916, and numerous small quartz veins were located. These properties are also owned by E. G. Rognon, of Dryden.

[1] "Gold Discovery near Dryden," by J. Bartlett, Can. Mining Journal, Dec. 1, 1915.

Fig. 17.—Shaft on Rognon property, K. 635, Contact bay.

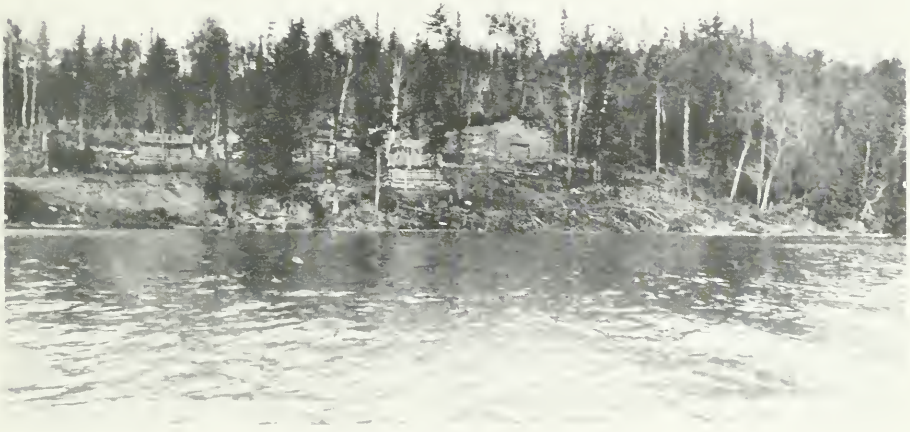


Fig. 18.—Rognon camp, Contact bay.

A vein carrying tellurides and bismuthinite, and showing small gold values, was also located in November, 1916, running across mining claims K. 665 and H.W. 443.

A road has been constructed, since the departure of the writer from this field, from the road between the League mine and Dryden down to the shore of Contact bay through these properties. Its location is shown on the accompanying map.

To the west of the western end of Contact bay are situated two old mining locations, known respectively as the Long Lead and American Jack claims.

The Long Lead property includes two forty-acre claims. Through these two claims runs a large quartz vein in the general direction N. 10° W. magnetic varying in width from 4 to 22 feet. It carries pyrite and chalcopyrite, but no gold values of any account. The country rock here is a basic Keewatin volcanic.

The American Jack property is south of the last location. A shaft has been sunk on this property to a depth of about 60 feet on a few quartz stringers in Laurentian granite and gneiss. The material on the dump is largely granite.

On the south side of Contact bay two properties have been located. On the first of these, E.D.B. 1 (S. 224), the larger of the two, two shafts have been sunk to a depth of 25 and 35 feet respectively on a quartz vein, about five feet wide at its widest part, which is at the deeper shaft. The vein material here is entirely quartz, and the country rock is a Keewatin quartz porphyry.

On the same side of Contact bay, the claim adjoining the last mentioned one to the east is S. 622. The north 40 acres of this long narrow claim was re-staked during the summer of 1916 for M. S. Campbell, of Dryden. The rock on the new claim is a dense quartz porphyry, and contains several small veins of quartz. The widest of these veins is one to one and a half feet in width, and has been stripped for a distance of 50 to 100 feet.

Mining location S.V. 372, adjoining the southern boundary of Van Horne township, has had its shaft deepened to 60 feet. Two mill-tests of the ore from this property were made in the summers of 1913 and 1914.

Properties in the Eastern Part of the Field

On the extreme northern shore of Butler lake several mining locations have been taken up. On one of these, two small shafts have been sunk, the first on a tangle of quartz stringers containing pyrite, ankerite, tourmaline, chalcopyrite, and malachite, the second on a quartz vein about 4 feet wide, containing the same vein material as at the first shaft. The country rock at the latter is a felsite schist striking about northwest, while that at the second shaft is an altered diabase.

Northeast of the town of Wabigoon is mining location H.W. 130, known as the Northern Queen mine. On this property a shaft has been sunk to a depth of 60 feet on a quartz vein carrying considerable pyrite. This vein, which is one to three feet wide at the shaft, strikes north-northwest and has a vertical dip. The country rock, which is heavily stained with iron oxide, is a diabase altered to diabase schist, striking about east and west, and with a vertical dip. As far as

could be ascertained, no gold values of any account were obtained from this vein. This property has not been in operation for several years, but as no description of it appears in any previous report, a brief mention of it seemed advisable.

On the first large headland west of Wabigoon station on the west side of Barritt's bay in Lake Wabigoon, J. Aaron, of Wabigoon, has sunk a shaft 50 feet deep on a series of small acid dikes running in the same general direction as the strike of the surrounding rocks. The shaft is situated on the west side of this headland. These dikes, which carry small quantities of pyrite and tourmaline, are felsitic in character, and penetrate a basic Keewatin volcanic rock. The small acid porphyritic dike, already mentioned in connection with the later dikes, outcrops in the vicinity of this shaft. At a point about in the centre of this same headland some talcose rock occurs. This rock is composed chiefly of impure talc, which may be readily cut with a hack-saw, but is evidently merely an altered phase of the Keewatin basic rocks. This is a fairly extensive outcrop, but the talc appears to be too impure, for the most part, to be of economic value. Some little crystallized talc also occurs in small veins.

Molybdenite

This mineral was found in four separate localities, two of them within the limits of the accompanying map (No. 26c.) and two outside.

In the extreme northeast corner of mining location K. 644, a small quartz vein occurs at the contact between the Laurentian granite and the Keewatin rocks. It contains small plates of molybdenite, as well as lesser quantities of pyrite and chalcopyrite. It is a very narrow stringer, and does not continue for more than a few feet. The largest plates of molybdenite here are only one-half to three-quarters of an inch in diameter.

In the claim to the north of this last one, K. 645 (A.S. 12), on the point south of the cabins at the Rognon camp, a little molybdenite is to be found near the water's edge. It occurs here in tiny flakes in quartz stringers in Keewatin rock, and also sprinkled through the rock itself. A little pyrite, chalcopyrite, and malachite are associated with the molybdenite. Besides these two occurrences of the mineral, two other molybdenite properties were visited by the writer for A. L. Parsons. These are both outside the limits of the accompanying map, one in the neighbourhood of Gull lake and the other in Upper Manitou lake district. Detailed descriptions of these two properties will be found in the report on molybdenite deposits in Ontario by Mr. Parsons in this volume. Some passing reference, however, must be made to the association of bismuthinite with the molybdenite on the property in the Manitou district. The bismuthinite here resembles stibnite in its mode of occurrence, appearing in the form of long slender needles, with a good metallic lustre on fresh fracture surfaces, but tarnishing to a dull brown colour on exposure.

Molybdenite has also been reported from Granite lake in Lower Manitou lake district, but the writer was unable to visit this deposit. Samples from this locality showed purple fluorite associated with the molybdenite.

Scheelite has also been reported from the vicinity of Lower Manitou lake, on mining location H.P. 303.

A trip was made by the writer with P. Kirkegaard, of Toronto, to the Laurentian property near the former town of Gold Rock. The Big Master and Jubilee mines were also revisited.

Fig. 19.—Wabigoon river at Dryden pulp-mill, below dam.

Fig. 20.—Rapids in Wabigoon river below C. P. R. bridge, showing power station.

Water Power

The Wabigoon river has two falls in its course through the town of Dryden, these supplying the power for the operation of the plant belonging to the Dryden Timber and Power Company. Undoubtedly more power could be developed here for the operation of mining plants, although no such use of this power has been made up to the present time. Figs. 19 and 20.

Acknowledgments

In conclusion, the writer wishes to acknowledge the kind assistance rendered to him by everyone with whom he came in contact while working in this field. Space does not allow the enumeration of all the names he would like to mention in this connection, but special thanks are due to E. G. Rognon and Mrs. Rognon, with whom he stayed during the first month in the field, and whose valuable aid on many occasions facilitated the work, both while on the ground and also in the compilation of this report. A. Pitt, G. Larson, A. McPhail, and D. Hutchison, of Dryden, should also be thanked for valuable help rendered during the summer. To E. D. G. Pidgeon and Mrs. Pidgeon, of Wabigoon, the writer and his party are indebted for much help while in their vicinity, and to J. Aaron, of Wabigoon, and J. Fraser, of Keewatin, for information as to the roads of this locality. Finally, the writer wishes to thank Dr. A. P. Coleman, Dr. T. L. Walker, and Prof. A. L. Parsons, of the University of Toronto, for valued advice on the geology of this area. Through the kindness of Wm. McInnes, of the Canadian Geological Survey, the writer was enabled to use Map No. 120, Rainy River district, Manitou Lake sheet, as a base map.

THE KOWKASH GOLD AREA

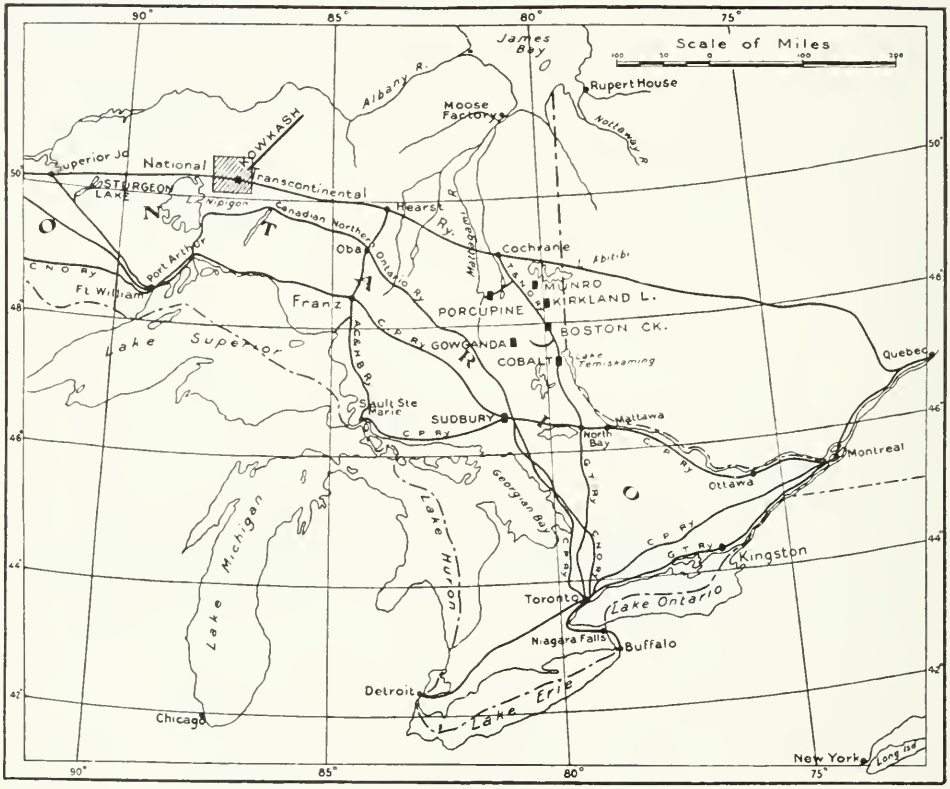
(SECOND REPORT)

By P. E. HOPKINS

I. INTRODUCTION

Location and Area

The following report deals with the topography, geology and economic resources of a region lying to the northeast of Lake Nipigon in the newly created Kowkash Mining Division, Thunder Bay district. The area examined, covering about 1,400



Sketch map of Ontario, showing Kowkash gold area.

square miles, as shown on the accompanying map, is located between 50° 3′ and 50° 32′ north latitude and 86° 58′ and 87° 58′ west longitude, along the height of land separating Hudson bay and Lake Superior waters. Until a few years ago the area could only be reached by canoe, the nearest railway being the Canadian Pacific, 80 miles to the south. The completion of the National Transcontinental railway through the region in 1913 has made the country accessible and given prospectors entry to an area of which little was previously known, with the exception of the Onaman iron range embracing a few square miles on the head waters

of the Onaman river. The finding of a spectacular gold showing by E. W. King-Dodds at Howard falls, nine miles north of Kowkash station, on August 21st, 1915, caused a rush of prospectors to the neighbourhood, which resulted in other gold finds being made along the Kawashkagama (Kowkash) river and in the vicinity of Tashota station, 25 miles to the west of Kowkash. Tashota, which is 320 miles west of Cochrane, can be reached in 28 hours from Toronto by Pullman train.

Accompanying this report is a coloured geological map of the area on a scale of two miles to the inch.

Early Exploration

Robert Bell, when examining the country north of Lake Superior in 1870 for the Geological Survey of Canada, got as far north as Wawong portage on the Kawashkagama river where Cavell station is now situated. The following year, 1871, he made a survey with micrometer and prismatic compass of the Ombabika river when en route to the Albany river.

In 1900 the Department of Crown Lands sent into northern Ontario, in charge of Ontario land surveyors, ten exploration parties, two of which traversed portions of this map-sheet. Joseph M. Tiernan, in charge of party number 6, with A. H. A. Robinson as geologist, travelled the Ombabika river and Robinson lake on their way farther north, while party number 5, with W. S. Davidson, surveyor, and E. V. Neelands, geologist, examined an area further east and reached as far north as Howard falls on the Kawashkagama river. Mr. Neelands in his report stated:

> Huronian [Keewatin] rocks, mainly chlorite and other soft green schists, occur on the Kawa-kash-kagama [Kawashkagama] river for about four miles below the Wawong portage to the northern limit of exploration [Howard falls]. . . . The most promising district is the country on the Kawa-kash-kagama [Kawashkagama] river below the Wawong portage. Here Huronian [Keewatin] exposures are numerous, mostly chlorite and other soft green schists. Several samples from small quartz veins in this district showed traces of gold, and it might be that careful prospecting in this district would be rewarded.

In 1902 W. A. Parks explored part of this region and made track surveys for the northeast quarter of the Nipigon sheet.[1]

During 1903 W. J. Wilson, assisted by Owen O'Sullivan, surveyed the Nagagami and other branches of the Kenogami river; also the Little Current river to within 25 miles of O'Sullivan lake. The next year Mr. Wilson, assisted by W. H. Collins, continued the work done in 1903, and connected the survey from Howard falls on the Kawashkagama through O'Sullivan lake and for 25 miles below, joining the survey of the previous year on the Little Current river. They also followed the series of lakes and portages northeastward from Wawong to Eskegenaga lake. The result of the two years' work was published in the Geological Survey publication No. 980, accompanying which is a map (No. 964) on a scale of 8 miles to 1 inch.

Between 1903 and 1908 numerous trial lines were run through this area for the National Transcontinental railway, which line was completed in 1913.

[1] Geological Map No. 8 A, scale 4 miles to the inch, accompanying Memoir No. 1, Geol. Sur. Can., 1910.

In 1907 and 1908 E. S. Moore mapped in detail the Onaman Iron range, which lies along Johnson creek near where Kowkash and Paska stations are now situated.

In 1908 A. W. G. Wilson, assisted by Robert Harvie, Jr., completed the

Kowkash station, National Transcontinental railway, September, 1915.

Tashota station, National Transcontinental railway, June, 1917.

geological details for the Lake Nipigon map (No. 8a), Mr. Harvie having examined some small lakes to the east of Cross lake.

In the autumn of 1915 the writer visited the area and examined the various gold discoveries north of Kowkash on the Kawashkagama river and near Tashota.

Kowkash Mining Division

Owing to the large number of claims that were staked in the rush following the King-Dodds discovery, a mining division was formed, with the Mining Recorder's office at Tashota. According to the Order-in-Council, dated May 26th, 1916, approximately 1,700 square miles were detached from the Port Arthur Mining Division for the new Kowkash Mining Division, the boundaries of which are described as follows:

Commencing at the southeast angle of the township of Henderson, being a point in the boundary line between the districts of Algoma and Thunder Bay, 74 chains 48 links north of the 93rd mile post on said district line; thence west astronomically along the south boundaries of the townships of Henderson, Selwyn, Barlow, Goodwin, Chipman and Raynar, 54 miles more or less to the southwest angle of the last mentioned township; thence continuing west astronomically 67 miles more or less to a point on the shore of Lake Nipigon at or near Humboldt Bay; thence in a general direction northwesterly, westerly, and southwesterly, following the shore line of Lake Nipigon in all its windings to the Wabinosh River, where it enters Wabinosh Bay of said Lake Nipigon; thence northwesterly following the south shores of Wabinosh Lake, Waweig or Round Lake, Sucker Lake, Valley Lake, Clear Lake, Tunnel Lake, and connecting streams to the west boundary of the Nipigon Forest Reserve; thence north astronomically along said west boundary of the Nipigon Forest Reserve and continuing north astronomically 85 miles more or less to the south shore of the Albany River; thence in a general course easterly along the south shore of said Albany River to its intersection with the boundary between the districts of Thunder Bay and Algoma; thence south astronomically along the said district boundary line 110 miles more or less to the point of commencement.

Mark R. Morgan of Port Arthur was appointed Mining Recorder of the said division, and has been doing business since June, 1916. Tashota is a station on the Transcontinental railway, and now has also a telegraph operator, express office and post office.

Surveys

Prior to the autumn of 1915 the only surveyed lines in the area were the numerous trial lines which were run between 1903 and 1908 for locating the National Transcontinental railway. These lines were not of any value to the writer since a large scale map showing their location could not be obtained. In November, 1915, R. S. Code, O.L.S. ran a line north from Paska station to locate Howard falls and numerous gold-mining claims in the vicinity. This line was connected eastward along the railway for 38 miles to Raynar township. The eastern boundary of the Nipigon Forest Reserve was run by Phillips and Benner of Port Arthur in 1916. The railway through the area westerly from O.L.S. Code's meridian line was traversed with chain and transit by the writer and party in 1916 for base-line purposes. No mining claims were surveyed in 1916.

Method of Field Work

The summer of 1916 was spent in examining the area, most of the time being devoted to making a topographical map. This necessitated slighting, to some extent, the complicated pre-Cambrian geology, and for this reason the report must be considered preliminary in character.

The survey of the waterways and the geological examination of the shore lines were carried on together. Instrumental surveying was done by means of a micro-

meter and prismatic compass and tied to one of the following chain-and-transit surveyed lines, viz.: the railway, R. S. Code's lines from the railway to Howard falls, and the east boundary of the Nipigon Forest Reserve. The sun-dial compass was used in surveying parts of Johnson creek and the Onaman river where iron formation is abundant. Occasional astronomic observations for azimuth and latitude were taken.

The geological work away from the water courses, railway and survey lines was carried on by making compass and pacing traverses on foot through the woods. This necessitated much labour owing to the absence of roads or trails, and the bad tangles of fallen and partly burned trees.

Approximate altitudes of lakes were obtained by measuring the drop of the falls and rapids by hand and reconnaissance levels, and connecting these observations along the canoe routes with the established levels on the National Transcontinental railway.

Method of moving canoes and camp supplies along the railway, Johnson creek crossing, August, 1916.

Acknowledgments

E. W. Todd, W. S. Dyer, A. C. Wheatley and P. A. Jackson, O.L.S. acted as efficient assistants during the season. In addition Mr. Jackson prepared the accompanying map.

The assays and analyses mentioned in the report were made by W. K. McNeill, Provincial Assayer, and his assistant, T. E. Rothwell.

The photomicrographs were taken by C. W. Knight.

The writer is indebted to numerous prospectors for assistance, and to Mark R. Morgan, Mining Recorder at Tashota, for maps of recorded claims, etc.

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II. GENERAL CHARACTER OF THE AREA

Topography

The area has an average altitude of about 1,000 feet above sea level. The topography in general is flat, with a maximum difference of not more than about 100 feet between the hills and the valleys. Some three miles to the west of O'Sullivan lake is an unusually large, cone-shaped hill which is conspicuous from O'Sullivan, Abamasagi and Eskegenaga lakes and the King-Dodds claim. The more rugged parts of the area are along the Ombabika waters below Cross lake, and around Willet and Albert lakes which lie to the east of Cross lake. The highest altitude in that locality is the granite hill 300 (?) feet in height on the south shore of Cross lake. This prominence can be seen from Summit lake and other points. On the whole, the country has one general level, showing that the various types of rocks have had no great influence on the topography. This is in a youthful stage, as shown by the deep undrained depressions, the sharp topographical features in the drift, and the recent cutting down of clay flats. Effects of glacial action are well in evidence, since moraines, eskers, kames, outwash plains and kettle lakes occur over large portions.

The continental divide, separating the waters of the great lakes from those of Hudson bay, runs in a sinuous course through the region, but nowhere is it conspicuous as a ridge. Near Paska, kettle lakes occur in morainic sand deposits which form the divide. A boss of granite three miles wide occurs at the divide, altitude 1,118 feet, at Redmond. A large swamp with streams emerging from either side often forms the water shed. Towards the northwest of the map-sheet is Summit lake, a shallow muddy lake three miles long by a mile wide, which discharges water both ways. The Pawitik river flowing northward towards the Albany, carries probably a larger volume of water than the Ombabika, the southern

outlet, which is shallow and almost choked with wild rice. It seems probable that the Pawitik river channel will cut still deeper and close the southern outlet of Summit lake; thus the waters from Marshall and Summit lakes may finally flow northward, in which case the Ombabika river would have its source in the large swamp between Summit and Cross lakes.

O'Sullivan lake, looking southwest towards the inlet of Kowkash river.

Frank lake, looking southwest from the island near the centre of the lake.

The average magnetic declination for the area embraced by Map 26a is 1° west of north. Where the iron formation is extensive the local attraction may vary considerably. Along the meridian forming the east boundary of the Nipigon

Forest Reserve, the average declination at the time of survey in 1916 was found to be 0° 45′ west.

Canoe Routes

Two good canoe routes cross the map-sheet in going from Lake Nipigon to the Albany river and thence to James bay. One of these is the old route via the Ombabika river, Summit lake, Pawitik and Kapikotongwa rivers. Revillon Frères use this route in carrying supplies from Ombabika station to their fur post at Fort Hope on the Albany. The other route from Lake Nipigon is via the Onaman river to the height of land at Paska and down Johnson creek, Kawashkagama river, O'Sullivan lake and Little Current river, which joins the Kenogami within ten miles of the "Forks" on the Albany.

Since many of the lakes of the area have been previously described by earlier explorers, only a few notes will be given on the newly mapped lakes. The shores of O'Sullivan lake are generally low and rocky, thus differing from Abamasagi lake, which is almost lacking in rock, and is characterized by its boulder shores and large scattered white granite boulders standing out of the shallow water. The Kawashkagama river enters Abamasagi lake from the south and within a short distance turns round, as the Indian name implies, and flows southward again for a short distance. A large creek from the southwest enters the west bay of Abamasagi lake. About 15 chains up this creek a portage three-quarters of a mile long leads into Lower Meta lake, which is quite similar in size and shape to Abamasagi lake. The lake is also shallow, and has low boulder shores with little rock exposed, some of the bays being muddy and weedy. It is reported that a large river, a branch of the Kapikotongwa, flows out of the northeast arm. The narrows to the northwest open into Upper Meta lake, which was described by an Indian to be a large lake 30 miles in length and having a northeast and southwest direction, which would make it the largest lake in the area. About three-quarters of a mile up a small creek entering the southwest bay of Lower Meta lake is a portage one and a half miles long running in a southerly direction into Marshall lake.

Forest

The trees are mostly second growth, and consist of small spruce, poplar, balm of gilead, jackpine, balsam, white birch, cedar and tamarac, usually up to 8 or 10 inches in diameter, and occasionally attaining a diameter of 2 feet or more along parts of certain rivers and lakes. Scrub ash occur on the shores of many lakes. Large portions of these forests are suitable for pulpwood, and locally for ties, posts, mining and small timber. However, much of the forest along the railway and for several miles inland in places has been completely destroyed by fires, many of which probably occurred during the time of the construction of the railway. Because of these fires the amount of timber and pulpwood determined by the timber estimators in 1900 has been considerably reduced. Charred stubs and pieces of burned wood under the moss are relics of old fires. The best timber seen occurs on the portage between Marshall and Meta lakes. In this locality there are numerous spruce, jackpine, poplar and birch 18 and 24 inches in diameter. The only forest fires in 1916 were in the vicinity of Howard falls and on Eskegenaga lake.

The central figure is Robert Wells, discoverer of the Wells claim near Tashota.

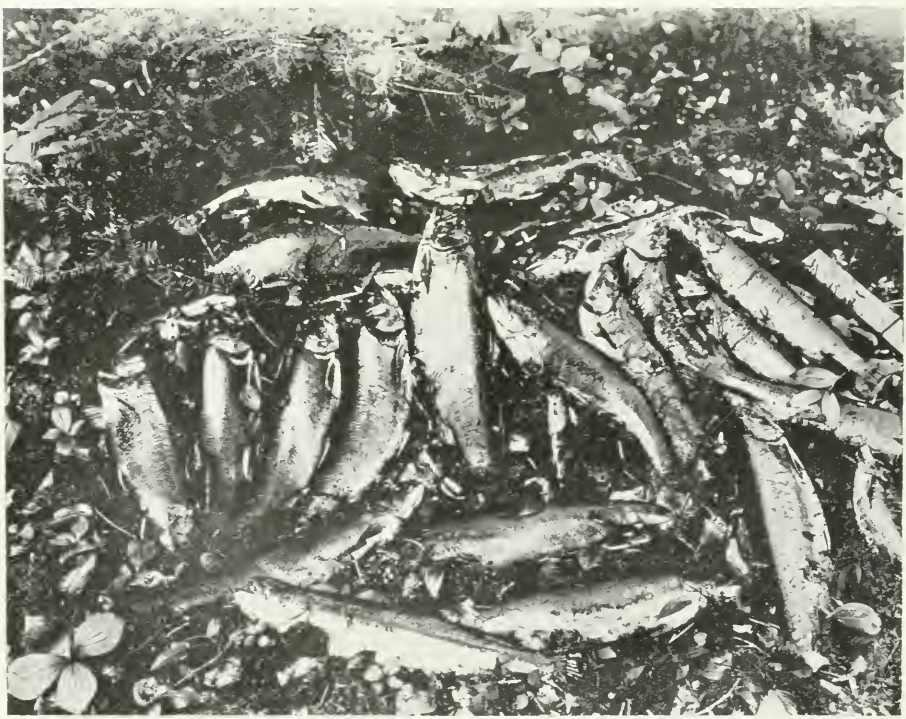

Photo by W. J. Wilson.

Speckled trout 16 to 20 inches long; Albany river waters, Kowkash region.

Agriculture

The area is not promising for agriculture, since it lies to the west of the great northern Ontario clay belt, and is largely occupied by compact rock, sand, gravel, swamp and some stratified clay. Small isolated tracts of clay loam suitable for farming occur along Johnson creek, Ombabika river, Pawitik river and other parts of the area. In 1916 potatoes, beets, carrots, turnips, lettuce, onions and radishes were successfully grown by prospectors at mileage 60 on the railway and at the crossing of Johnson creek and the railway. Also, during the same summer, attempts were made by squatters to cultivate the good clay loam along Johnson creek which, in 1906, was denuded of trees by fires. Small trees have since come up, but these are easily cleared. Such land is excellent for farming purposes, but limited in extent.

Among the small fruits blueberries are very plentiful on the sand plains and rocky knolls, wild strawberries are found on the clay flats, while wild red raspberries grow everywhere along the sides of the railway.

Fish and Game

The larger animals consist of moose, caribou, red deer and black bears. Moose are very plentiful, while red deer are rather scarce. Wolves and lynx are numerous in certain localities. Foxes, including the red, black and cross varieties, and the smaller fur-bearing animals, viz.: beaver, otter, martin, fisher, muskrat, mink, weasel and skunk, are trapped in varying quantities. The beaver appear to have been plentiful about ten years ago, but are now nearly extinct. The only fresh beaver cuttings were noted on Wheatley lake and Phillips lake, which are secluded inland lakes away from the main canoe routes. Other small animals are the common squirrel, flying squirrel, chipmunk, rabbit, ground hog and porcupine.

Among the game birds are the partridge, prairie chicken, wild ducks and geese. In the autumn the wild ducks and geese gather in hundreds on Summit lake and the adjoining streams which are filled with wild rice beds. Loons, gulls, grebes and numerous song birds were seen.

The lakes and streams abound in fish. The waters contain pike and suckers in large numbers, and pickerel, whitefish, lake trout, perch and brook trout to a lesser extent. Four-pound whitefish are abundant in Marshall lake, and are known to occur in Abamasagi, O'Sullivan and Metcalfe lakes. Lake trout can be caught in Cross lake; a perch was caught in Jackson lake. Speckled trout are abundant, especially at Howard falls and other rapids on the Kawashkagama river and Wilgar creek. At times they can be caught freely with either fly or bait, averaging one foot in length. Several which were caught at Howard falls were 24 inches in length.

Water Powers

On the rivers are many small undeveloped water powers, the location and fall in each case being shown on the accompanying map. From some of these falls might be developed sufficient power for local mining development work. The best are on the Kawashkagama, the largest river. Rupert falls on this river has a

drop of 16 feet in a distance of 240 yards. Howard falls, farther down the river, has a drop of 20 feet, due to a hornblende-chlorite ridge through which the river cuts, making a narrow canyon-like gorge 310 yards long. About four and a half

Indian on the Kowkash river taking pickerel from a net.

Photo by W. J. Wilson.

Howard falls, Kowkash river.

miles below the latter is Albert falls, with a drop of 11 feet in 50 yards. A series of rapids and falls with a natural head of 17 feet occurs in a distance of 330 yards on the Robinson river, about half a mile below the junction with Frank creek.

III. GENERAL GEOLOGY

The compact rocks are all pre-Cambrian. They have been glaciated, and are now thinly covered in places with Pleistocene deposits, and are classified according to the following table, the oldest rocks being placed at the bottom and the others arranged in the order of their relative ages.

LEGEND

PLEISTOCENE	Boulder clay, sand, gravel, swamp, peat bogs, etc.
PRE-CAMBRIAN—	
Keweenawan (?)	Quartz-diabase and gabbro dikes and sill remnants.
	Intrusive Contact
Timiskamian (?)	Schistose conglomerate, slate and greywacké.
	Unconformity
Laurentian (?)	Quartz-porphyry dikes.[2] Granite,[2] rusty granite gneiss and pegmatite.
	Intrusive Contact
Keewatin	Serpentine.[3] Iron formation. Rhyolitic tuff, agglomerate slate and conglomerate (?). Rhyolite and quartz-porphyry. Basic pillow lava and diabase,[4] chlorite and hornblende schist and ferruginous carbonate.
Marshall Lake series.	Massive and schistose whitish quartzose rock with mica, hornblende, chlorite, garnet and staurolite, with some Iron formation and breccia.

Keewatin

The Keewatin rocks have a wide distribution, and are important since they contain gold-bearing veins. The rocks consist dominantly of basalt and rhyolite. Accompanying the latter are considerable volumes of agglomerate and fine black tuffs, associated with which are narrow bands of Iron formation. These rocks were probably deposited in the same water basin, and in some cases are interbedded. They are now greatly altered, and in places very schistose and closely folded. The rocks generally have a vertical dip, but the strike, which varies considerably, usually approaches the east and west direction.

The rocks are classed with the Keewatin, because they are similar to the Keewatin in other parts of Ontario and are probably the oldest rocks in the area. A more detailed description of the various types follows.

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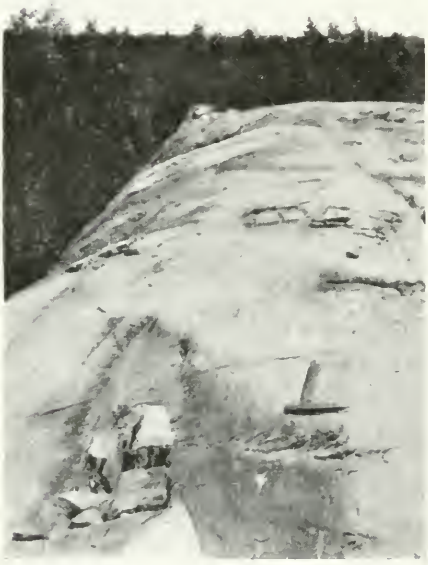
[2] Some of these granites and quartz-porphyries may be Algoman in age.

[3] The serpentine on the Kawashkagama river lies in a position suggesting that it may be intrusive into the chlorite, hornblende and mica schists. It may be post-Keewatin in age.

[4] The basic extrusives at Cross lake contain mica schists similar to the Marshall Lake series, which can be separated on more detailed mapping.

Basic Extrusives, Etc.

The basic extrusives or greenstones, which are the oldest of the Keewatin, have the same general characteristics as the Keewatin basic rocks in Porcupine and other parts of Ontario. They consist of fine-grained altered basalt and dacite (?), which can usually be recognized by the ellipsoidal and amygdaloidal structure, and are roughly interbanded at times with a coarser, non-pillow, altered quartz-diabase. It seems certain that they represent successive flows which were poured out in the bottom of a water basin. Since their deposition the rocks have been turned up on end, and in places have become very schistose and entirely altered. The



Keewatin conglomerate? 15 chains southwest of mileage 45 on the railway.

Keewatin banded ash rocks and tuffs, mileage 54 on the railway.

original tops and bottoms of the flows have not been worked out. Some of the coarser varieties may be intrusives.

Generally, microscopic examinations do not give any clue whatever to the original nature of the rocks, on account of the intense alterations which they have undergone. However, a completely altered lava schist will sometimes retain the ellipsoidal structure on the weathered surface, showing the extrusive character of the rock. A massive pillow lava from a point half a mile south of mileage 41 on the railway showed under the microscope a network of albite laths in a groundmass consisting largely of calcite with small amounts of chlorite, leucoxene and iron oxide. All of the minerals in this rock including the feldspar, are secondary.

In the fresher samples of pillow lava a basaltic texture can be observed, showing rods of plagioclase set in a groundmass of pyroxene or hornblende, with much chlorite, calcite and other secondary minerals. The massive greenstones with non-pillow structure resemble in many cases altered quartz-diabases with the feldspars altering to saussurite. Much secondary calcite is generally present.

From these rocks chlorite and hornblende schists have been developed, associated with which are small amounts of agglomerate and tuff. Some of the chlorite schists may be altered tuffs. A prominent band of chlorite, hornblende slaty rocks extends along the north shore of O'Sullivan lake and the Kawashkagama river above O'Sullivan lake. The band lies between the typical pillow lavas and Laurentian (?) granite and rusty gneisses, and in places has a sedimentary appearance. At the west end of Cross lake the talc schist may represent an altered peridotite. Associated with the greenstone around Cross lake are some mica quartzose schists resembling the Marshall lake series which is described later in the report. These rocks could be further separated from the Keewatin at Cross lake with more detailed mapping.

Ferruginous Carbonates

These carbonates are not so prevalent here as in Porcupine and in many other parts of northern Ontario. The locations of the outcrops are marked on the map. A small exposure of silicious rusty dolomite may be seen at the northern end of the Tashota gravel pit. Its association with Iron formation suggests that it may have been a chemical sediment deposited with the iron. Narrow veins of ankerite were also seen on the Wells claim, and immediately north of the granite mass at the Tashota water tank. The various carbonates disseminated through many of the old rocks may represent replacement or decomposition products. The rock marked "ankerite" on the east shore of O'Sullivan lake gave on analysis: 13.42 per cent. of ferrous carbonate, 51.62 per cent. of calcium carbonate, and 22.07 per cent. of magnesium carbonate, the impurities being largely silica. The large peninsula on O'Sullivan lake, one mile and three-quarters south of the mouth of the Kawashkagama river, consists of rusty ferruginous bands interbanded with chlorite schist or pillow lava. Generally narrow quartz veinlets intersect the dolomite, but are not known to carry gold.

Rhyolite and Quartz-Porphyry

These white-weathering rocks are similar to the rhyolite porphyries at Porcupine, but have a wider distribution. They occur as irregular flow-like masses, often several miles in extent, with the greenstones in the south central part of the area. They are sometimes interbedded with the basic flows; occasionally the dike-like forms extend into the greenstones, but rarely into the black slates and iron formation. They pass into and are overlain by agglomerate, rhyolitic tuff, black slate and Iron formation, and are cut by granite, granite-porphyry and quartz-diabase.

The coarse rhyolites contain numerous white quartz phenocrysts, the size of beans, and some feldspar crystals in a glassy, light gray groundmass. These grade into a dark gray porphyry resembling chert. An exposure of typical white

massive rhyolite may be seen one-quarter of a mile northeast of Paska station, while a massive cherty variety occurs at mileage $50\frac{1}{2}$ on the railway. The cherty nature may be due to some chemical change when the material was being laid down. The rock is generally schistose and sometimes brecciated. The white and grayish rhyolites in the vicinity of Metcalfe lake have been altered to sericite schist, soapy to the touch. They contain much disseminated pyrite, have a rusty weathering surface, and are cut by quartz veinlets which contain some bismuthinite. No feldspar phenocrysts were noticed in this particular rhyolite.

E. S. Moore, who examined numerous thin sections of rhyolite-porphyries from the Onaman Iron range, describes their microscopic characters as follows:—

Banded Keewatin ash rocks cut by narrow lamprophyre dike, mileage 50.6, railway

These rocks all have a porphyritic texture and a holo-crystalline groundmass, the latter developed by re-crystallization under metamorphic agencies. The groundmass is usually crypto-crystalline, but varies in some cases to micro-crystalline. In almost all cases the phenocrysts have been broken during the metamorphic processes, and the cracks filled with sericite or calcite, or both. In some of the rhyolites the crystals have been pulled apart and the spaces between the fragments filled with the regular groundmass, in such a way as to indicate that this process took place during the extrusion and movement of the molten rock. The proportion of quartz, orthoclase and plagioclase phenocrysts varies greatly. In some slides no quartz crystals occur, in some plagioclase and orthoclase are nearly equal, and in others all three may be well represented. The quartz phenocrysts sometimes contain mineral inclusions. The phenocrysts of both quartz and feldspar are very often rounded or gouged by the groundmass.[5]

Rhyolite-tuff, Agglomerate Slate and Conglomerate (?)

The rhyolite flows appear to pass gradually into pyroclastics and sedimentary rocks consisting of rhyolite-tuff, agglomerate slate and conglomerate (?), with no sharp line between them. Along the railway from mileage 55 to 54 one can see a gradual transition from rhyolite to agglomerate, which changes to ash rocks and finally to bedded greywackés. Numerous small outcrops occur in the Onaman Iron range. The most prominent band of the volcanic fragmental rocks extends

[5] Report, Ont. Bur. Mines, Vol. XVIII, 1909, p. 224.

from a point one mile south of Kowkash station in a northwesterly direction for 14 miles to Growski lake, where it is intruded by the granite. The railway follows this narrow band of soft rocks for several miles; 15 chains southwest of mileage 45 on the railway is a large isolated outcrop which resembles conglomerate. The pebbles consist dominantly of cherty rhyolite with an occasional quartz pebble. No greenstone pebbles were noticed. The fragments vary from microscopic size to over three feet in length. Many are rounded and water-worn, while others are angular. The groundmass has the appearance of rhyolite and occasionally of greywacké. The fine ash rocks were probably deposited in water, since they are usually stratified, and resemble slate and greywacké or arkose which now stand on end. They are cut by narrow mica-lamprophyre dikes, granite, granite-porphyry and quartz-diabase. The mica-lamprophyre dikes may be of Keewatin or later age.

Tourmaline occurs in the rhyolite and other closely associated rocks, viz.: slates, greywackés, matrix of the conglomerate and Iron formation. Moore suggests that the tourmaline is the result of fumarole action, occurring as the after effects of the acid magma which formed the rhyolites and rhyolite porphyries. Tourmaline also occurs in quartz veins cutting these various rocks, and in the auriferous quartz veins in the Keewatin at Tashota.

Iron Formation

The Iron formation is composed largely of red jasper, some "sugary" quartz, often well banded, and magnetite with a little specular hematite lying conformably upon the pyroclastic and sedimentary rocks previously described. It occurs largely as outcrops arranged in two bands running east and west in the vicinity of Johnson creek. The northern range outcrops run from Nixon lake easterly for ten miles to a point two miles to the south of Kowkash. The southern range, locally known as the Bain deposit, two miles to the south, extends from Castor lake easterly for two miles, and approaches 700 feet in width, but contains much foreign rock.

Shortly after the discovery of the iron ranges in 1906 numerous claims were staked by the Flaherty syndicate, C. Bain and other prospectors. Much stripping and trenching and some diamond-drilling were done, but finally the ranges were vacated and the claims allowed to lapse. E. S. Moore identified the mineral dumortierite ($Al_{20}Si_7O_{44}$) in the jasper and slate of this area. The origin of the iron deposits is accounted for by Moore as follows:—

> From a consideration of the different theories for the origin of these deposits, the writer concludes that the original rocks were cherty iron carbonate and oxide. The materials were supplied to enclosed basins by weathering action under the influence of plant life, and by heated igneous rocks coming in contact with the waters. These rocks supplied salts of iron and the alkalies to the waters. That cherty iron carbonate was the original rock which gave rise to much of the magnetite and hematite is evident from the wide distribution of this mineral in all the iron formation rocks, and by the transitions between it and magnetite which may be seen in the thin section. That part of the hematite has been deposited as limonite, and dehydrated, is suggested by its very close resemblance to some of our bog deposits of the present day. Under the microscope one can see the gradations from a clastic slate with some iron oxide, unto a mixture of hematite and minor amounts of mechanical sediment. The composition and texture of the rock are just what one would expect if some of our bog ores were highly metamorphosed. Since the deposition of these rocks they have been subject to extensive metamorphic changes which have developed magnetites and hematites from the carbonates, and crystallized silica from the chert.[6]

[6] Rep. Ont. Bur. Mines, Vol. XVIII, 1909, p. 243.

Other narrow bands of magnetite and chert occur to the southeast of Redmond near Lake St. Marie and in the vicinity of Tashota. At Lake St. Marie and other places the magnetite has been almost wholly replaced by pyrite which carries low gold values. On the Cline claim near Tashota the narrow iron formation band is partly replaced by pyrite and cut by quartz veinlets which carry visible gold.

Serpentine

An area of massive, rather hard serpentine occurs for three miles along the Kawashkagama river immediately above O'Sullivan lake. Its relationship to the other rocks is not known, but it lies in a position suggesting that it may be intrusive into the Keewatin mica-hornblende-chlorite schists.

Under the microscope the serpentine is clearly seen to be altered from crystals having olivine outlines. There are present in the thin section large areas of calcite and numerous grains of magnetite. At the last portage before reaching O'Sullivan lake, and near the edge of the outcrop, the rock becomes very schistose and resembles slate. Under the microscope the rock of this portage is seen to be composed almost entirely of actinolite in broad plates and fibrous aggregates.

On analysis a sample of the serpentine showed the following composition:—

Silica, 37.54; Alumina, 6.36; Ferric Oxide, 5.00; Ferrous Oxide, 6.91; Lime, 2.55; Magnesia, 28.66; Soda, 0.70; Potash, Trace; Chromium, Trace; Carbon Dioxide, 3.06; Water (combined), 9.44; Total, 100.22.

The only other serpentine rock seen occurs on the southwest shore of Cross lake. Numerous small veinlets of asbestos and magnetite run indiscriminately across the serpentine, which has distinct olivine outlines and is probably an altered peridotite. The metallic veinlets do not contain any chromium. The talc schist in this vicinity may represent another alteration phase of a peridotite.

Marshall Lake Series

Marshall Lake series is the name here proposed for a group of metamorphic, quartzose rocks occurring in large volume in the vicinity of Marshall lake. W. A. Parks in his report on the area classes these rocks as Huronian (Keewatin) and he groups the light-coloured type (Marshall Lake series) and the Keewatin greenstones in one class. A. W. G. Wilson followed Mr. Parks, and classed them all as Keewatin on his map of Lake Nipigon; however, in his accompanying report he states that the acid schistose rocks in the Summit and Marshall lake region occupy a very doubtful position between undoubtedly Keewatin and undoubtedly Laurentian. On map No. 864 published by W. J. Wilson and W. H. Collins in 1911, of the Canadian Geological Survey, the same rocks are mapped as Laurentian. This group of rocks which is, therefore, of doubtful age is here called, for convenience, the Marshall lake series, and will be more fully described.

The Marshall lake series occurs in one large area extending from Marshall lake along the Lily river and lake and southward along the east boundary of the Nipigon Forest Reserve to Willet and Albert lakes. In the vicinity of the latter lake some Keewatin rocks may be included with the series. Rocks, similar both megascopically and microscopically, occur also in small volumes with the pillow

lavas on Cross lake and with the diorites and amphibolites on the long portage westward from Cross lake. However, considerable detailed work would be required to map all these rocks separately. The series, as far as known, covers roughly about 75 square miles. The rusty garnetiferous schists on Pawitik river and the north shore of O'Sullivan lake may also belong to this series.

The series is made up of fine-grained metamorphic rocks consisting dominantly of whitish quartzose-mica-schists, alternating with subordinate amounts of hornblende-garnet and staurolite-quartz-schists, and rarely with Iron formation. The light-coloured, quartzose-mica-schist contains large, angular, broken fragments of white and bluish quartz set in a finer groundmass of quartz, with considerable mica and other secondary minerals. A sample from the 83-mile post on the Nipigon Forest Reserve boundary was examined microscopically and found to consist largely of quartz and biotite in a ratio of four to one, the biotite being partly altered to chlorite. Some calcite and magnetite and a few garnet masses are present. Such rocks are probably clastics, associated with which are small amounts of similar-looking rocks which when examined microscopically proved to be igneous in character. One such sample from the big island on Lily lake showed a large altered feldspar phenocryst in a fine groundmass of quartz with biotite and hornblende altered partly to chlorite. Some calcite, magnetite and apatite were also present. Seven samples of the whitish quartzose-mica-schist taken from various places in the vicinity of Lily lake were analysed as one composite sample by W. K. McNeill. The results were as follows: Silica, 59.10; Ferric Oxide, 1.45; Ferrous Oxide, 2.16; Alumina, 23.03; Lime, 4.40; Magnesia, 1.30; Soda, 3.82; Potash, 2.30; Carbon Dioxide, 0.57, and Water 1.97 per cent. This analysis resembles closely the analysis given by A. C. Lawson for the Couchiching of Rainy lake.

W. A. Parks collected a rock of the quartzose-hornblende type from a locality near the western end of Lily lake and describes it as follows:—

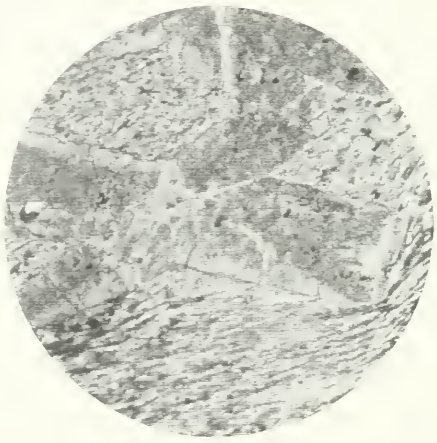
> Under the microscope this rock shows a fine mosaic of quartz fragments, all much torn and broken. Larger corroded pieces of hornblende occur, in part altered to chlorite, and other secondary minerals. Grains of pyrite and of magnetite are common, as well as bars and needles of apatite. The whole rock shows evidence of much alteration, so that its original nature is doubtful, but from the occasional occurrence of larger fragments of quartz with distinctly broken borders, the rock would seem to be a clastic.

Associated with these rocks are narrow bands of somewhat similar rocks, which contain in addition numerous red garnets and staurolites occurring as wart-like protuberances upon the weathered surface. A garnetiferous quartz mica schist from a point about three-quarters of a mile east of mileage 84 on the Nipigon Forest Reserve line shows large masses of altered garnets, with quartz and calcite in a fine granular groundmass consisting of 60 per cent. quartz, 30 per cent. biotite, largely altered to chlorite, and small amounts of calcite, magnetite and pyrite. On the northwest shore of Albert lake can be seen a dark-coloured medium-grained rock containing beautiful large staurolite crystals. Under the microscope the staurolites are often twinned, and around these crystals bend numerous biotite flakes which are partly altered to chlorite and epidote. Much quartz and small garnet masses also occur in the groundmass. These particular bands of rock

contained, originally, certain minerals which yielded garnets and staurolite after metamorphism.

On the south central shore of Marshall lake, and immediately north of the east end of Willet lake, are narrow bands of iron formation consisting of "sugary" quartz, chert, slate and rather thin layers of magnetite, associated with which are considerable amounts of pyrrhotite and pyrite. These bands appear to be a part of the Marshall lake series. The hornblende biotite schists on the Kowkash river between O'Sullivan and Abamasagi lakes and also on the north shore of O'Sullivan lake, may belong to the Marshall lake series.

This series resembles somewhat Lawson's Couchiching rocks of Rainy lake. It is also apparently similar to the mica-hornblende-quartzose schists occurring at the edge of the Keewatin area in the vicinity of Long lake, which are described



Photomicrograph of a staurolite-garnet mica schist from Albert lake, showing a large twinned crystal of staurolite around which bend the flakes of biotite. Magnification 20.

as Keewatin elsewhere in this volume by A. G. Burrows. In addition it resembles a part of the Grenville in southeastern Ontario, and M. E. Wilson's Pontiac series in western Quebec.

The chemical composition, microscopic evidence and frequent occurrence of alternating coarse and fine bands in these quartzose rocks suggest that they are clastics or volcanic fragmental rocks deposited in water. Since they are interbanded with ellipsoidal lavas on Cross lake and contain some iron formation, they are apparently closely associated with the Keewatin. However, the contact on an island half a mile from the east end of Willet lake appears to show the Keewatin amphibolite or altered diabase cutting the white quartzose rock of the Marshall lake series. The acid, igneous rocks of the series may be Laurentian, but it would be impossible to separate the igneous from the sedimentary type. The series is cut by Keweenawan quartz diabase and an occasional pegmatite dike, but was not seen in contact with the granite.

Laurentian (?)

About one-half of the area is represented by acid rocks, viz.: granite, granite-gneiss and pegmatite, etc., which occur in the form of batholiths, bosses and dikes. They are grouped together since they can be separated only in places and with difficulty. They are classed Laurentian (?) because the granite-gneiss and pegmatites are similar to the Laurentian in other parts of the pre-Cambrian shield; however, the fresher massive granites resemble the Algoman in Cobalt, Porcupine and Kirkland lake.

Gneisses

The granite-gneisses are not nearly so prevalent as the massive granites. The main occurrences are marked on the map and may be called granite-gneiss containing biotite, hornblende or both these minerals. They grade into massive granite in the vicinity of Frank lake, Ombabika station and other places. The rusty-weathering garnetiferous mica schists on the Pawitik river and Meta lake, although mapped with the Marshall lake series, may be Laurentian.

Granite hill on the south shore of Cross lake, probably 300 feet high.

Granites

The granites have a much wider distribution than the gneisses and, in many cases, are younger. On the northeast part of O'Sullivan lake the granites were seen cutting the gneiss, and on the west side of the narrows of Jackson lake, and on the west shore of Goode lake, the granite contains inclusions of an older-looking gneiss. The massive, fresh-looking varieties resemble the Algoman granites in other parts of Ontario. They are red or gray in colour, and of the biotite and hornblende type. Often the granite is porphyritic, with orthoclase crystals one inch in length, as on the portage below Goode lake. The granite may grade into a hornblende syenite, as on the southwest shore of Gzowski lake. The granite is cut by quartz veins and by pegmatite, aplite and other dikes representing differentiation facies of the magma. Also some of the darker facies to the south of Tashota station and west of Tashota creek, may be due to the assimilation of the adjacent schist complex. The homogeneous red granite mass at Redmond contains microcline showing the gridiron structure, albite, quartz and biotite partly altered to chlorite.

The stock-like granite mass at the Tashota water tank clearly sends tongues into the adjacent Keewatin rocks, and a hornblende syenite dike can be seen cutting the rhyolites at mileage 56.3 on the railway. The granites at mileage 57 and 71 on the railway are massive and jointed, and appear to be of a quality suitable for building stone.

Quartz-Porphyry

Numerous, narrow dikes of quartz-porphyry occur in the vicinity of Tashota and Howard falls, while an occasional dike may be seen over scattered parts of the whole area. They probably represent apophyses from the granite masses and may be Algoman in age. The fact that the porphyry usually occurs near the gold-bearing quartz veins, suggests a relationship between the intrusive and the veins, and hence their importance.

The porphyry occurs as dikes up to 30 feet in width. The white-weathering surfaces make them stand out conspicuously in the dark greenstones. The porphyry contains numerous white quartz phenocrysts, the size of peas, and some feldspar phenocrysts in a fine-grained, grayish-white groundmass. The porphyry also contains some quartz stringers, is schistose in places and resembles the quartz-porphyry in other parts of the Province. A sample from the Dodds claim which was examined microscopically showed large, rounded, angular and broken quartz grains, and albite phenocrysts, partly altered to sericite. The crystalline groundmass consists of quartz, feldspar, sericite, calcite and a little chlorite. This description will also answer for the porphyry from the Wells claim.

Timiskamian (?)

Two small exposures of conglomerate slate and greywacké apparently similar to the Timiskamian sediments in Porcupine and Kirkland lake, occur in two widely separated parts of the area, viz.: two miles below Howard falls on the Kawashkagama river, and on the northeast arm of Cross lake.

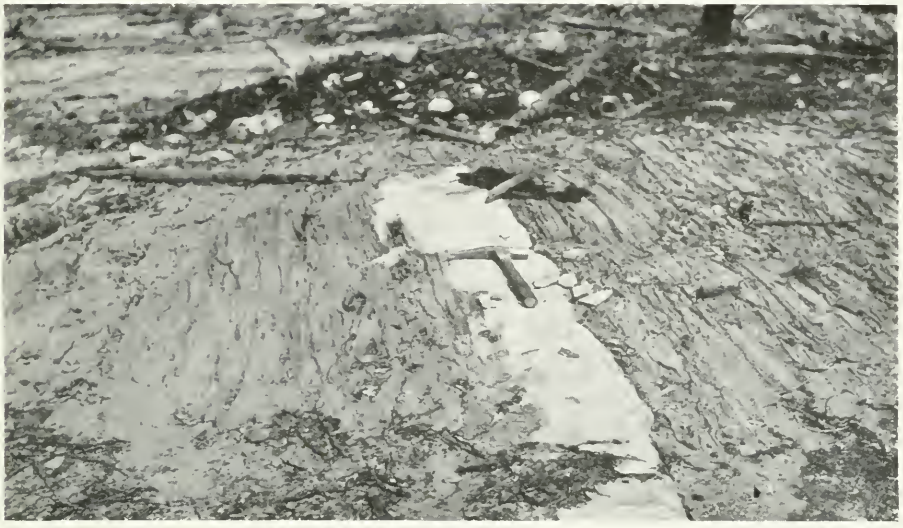
Sediments on Kawashkagama River

The bedding and schistosity of the sediments below Howard falls strike 65° and have a vertical dip. On the south part of the exposure there is a slate band 50 feet wide, north of which is a conglomerate band 100 feet in width and containing a great variety of pebbles, elliptical in shape. They consist of rusty mica-granite gneiss similar to the Laurentian (?) rusty gneiss on the northeast part of O'Sullivan lake, quartz-porphyry or rhyolite, chert, and amygdaloidal basalt. The nature of the conglomerate would suggest an unconformity between it and the underlying Laurentian (?) and Keewatin. The conglomerate is separated, on the north, by a few feet of drift from a large volume of massive pillow lava.

Sediments on Cross Lake

A narrow fringe of sediment skirts the irregular south shore of the northeast arm of Cross lake. The sediments consist dominantly of conglomerate with some greywacké and slate. The strike is southeasterly, and the dip almost vertical. The conglomerate is a typical beach conglomerate, containing numerous coarse pebbles

about four inches in length with little matrix. The pebbles consist chiefly of gray feldspar-porphyry and a gray quartzose mica rock resembling the Marshall lake series, with an occasional greenstone and white vein quartz pebble. A thin section



Porphyry dike in Keewatin green schist.

Timiskamian (?) conglomerate, Cross lake.

of one of the gray porphyry pebbles showed microcline, albite, and a few quartz phenocrysts in a microcrystalline groundmass of quartz, biotite partly decomposed to chlorite, and iron oxide.

Keweenawan (?)

The quartz-diabase, of which the gabbro is a phase, penetrates all the other rocks. It is classed as Keweenawan since it is similar to the Keweenawan olivine-free type of diabase which occurs in large volume around Lake Nipigon, a few miles to the west, and in other parts of Ontario. The dikes, which are usually vertical, vary from a few inches to 200 feet in width, and can be traced for over a mile on the surface. A small remnant of a sill lying nearly horizontal occurs near mileage 56 on the railway. The outcrop half a mile northeast of Howard falls is a stock-like mass of coarse diabase showing the ophitic structure. A thin section of a typical quartz-diabase from a dike on the Lily river two miles east of Lily lake consists of labradorite laths showing albite twinning lamellae partly altered to saussurite, augite partly decomposed to hornblende and epidote, and beautiful graphic intergrowths of quartz and feldspar. The finer minerals

Keweenawan quartz diabase dike (black) cutting granite, mileage 70.5, railway.

consist of quartz, biotite partly altered to chlorite, magnetite or ilmenite, a little calcite, and apatite needles. No olivine was seen in the thin sections that were examined. Pyrite and pyrrhotite are present in many of the diabases.

Pleistocene Deposits

The map-area lies near the western edge of the northern Ontario clay belt, whose clays were probably deposited in Lake Ojibway. There is some doubt as to whether this particular area was covered by Lake Warren, or Lake Ojibway, or parts of each.

The recent drift deposits consist of stratified clay, boulder clay, sand, gravel, boulders, swamp, moss litter and peat bogs, many of the areas being outlined on the map. Most of the swamps are underlain by peat bogs, some over six feet in thickness, along many parts of the railway. Underneath the peat in places is

stratified clay, as on parts of Cross lake. The stratified clay occurs in isolated low areas, while the sand and gravel usually occur in prominent ridges. When the clay is mixed with some glacial sand, as along parts of Johnson creek, a good clay loam, suitable for agriculture, is formed.

Extensive terminal morainic hills, from the height of land near Paska along Johnson creek to Cavell and eastward beyond the map-sheet, stand out prominently, having been completely denuded of vegetation by forest fires in 1906. These ridges mark the position held by the front of a glacier for a long period. The deposits are largely moraines, with kames and eskers less prominently developed. The stratified sand and gravel pit at Titania probably represents a kame, while Kowkash is built on an outwash plain formed from an ice-sheet. The numerous

Photo by E. S. Moore.

Kettle lakes in terminal moraines near Johnson creek, south of Kowkash station.

kettle lakes may be due to buried masses of ice melting out after the retreat of the main ice-sheet. Some of the depressions are now dry and the bottoms are as much as 80 feet below the tops of the hills surrounding the basin.[c] As many as five of these lakes without visible outlets may be seen in one photograph. The deposits are made up of sand, gravel and coarse boulders composed of granite, greenstone, chert, fossiliferous limestone and other rocks, many of which, in the vicinity of Paska, are coated with white calcium carbonate. Although many of the pebbles may have travelled long distances, the greater number are similar to the local rocks. The nearest known Paleozoic limestone "in place" is the Silurian, which occurs about 55 miles to the northeast of Cavel station.

Where the soil has been removed the glacial scratches and grooves are often well preserved, the jaspers, especially, having retained their beautiful polish. The

ice moved from the northeast over the height of land in a general southwest direction, the directions of the striations varying from S. 30° W. to S. 50° W. On Oboshkegan (Narrow) lake a prominent glacial groove has a southeast direction, while farther down the north branch of the Onaman river, opposite mileage 64, (Nipigon Forest Reserve), the direction is east and west. These variations may represent local differences in the ice movement.

The north branch of the Onaman river (near mileage 66, Nipigon Forest Reserve line) wearing its way through a flat, densely-wooded, boulder country.

A Recent Deposit: Travertine

Much fine calcium carbonate was seen coating the pebbles, roots and stems of plants in the upper three miles of the north branch of the Onaman river. Many small fresh-water shells also occur in these parts. E. S. Moore describes a deposit of calcium carbonate, or travertine, of considerable extent half a mile from Paska station and occurring in Red Paint lake, which is fed by springs issuing from the drift beneath, as follows:

> The deposit of calcium carbonate, or travertine, in Red Paint lake, is at least 20 feet deep at the southeastern end, as a pole can be thrust down into it to that depth. Around other portions of the lake the deposit varies greatly in thickness, and may even be lacking.

The creek leaving the lake is so saturated with calcium carbonate that it deposits travertine on the roots and stems of plants along its course, and on the bottoms of the upper lakes of the Red Paint river. . . . The source of this mineral is probably the calcium carbonate found on the pebbles of the drift in the surrounding region. . . . Were this deposit favourably situated, it might be used in the manufacture of cement, but there is no prospect, so far as can be seen at the present time, of its becoming of economic value. Even the coming of the new railroad is not likely to awaken any industrial interest in a region so isolated and so far removed from the centres of population.[7]

Somewhat similar material occurs in Wawong and other small lakes to the north east. The water in Wawong lake, as the Indian name implies, is very clear and of a peculiar bluish-green colour. White shell marl was also seen in a small pond half a mile to the southwest of the Tashota gravel pit.

IV. ECONOMIC GEOLOGY

Gold : Character of the Deposits

Gold is the chief mineral sought for in the area at the present time. The gold-bearing quartz veins occur chiefly in the Keewatin pillow lava and diabase schist, and occasionally in the Iron formation, which have been intruded by quartz porphyry dikes probably of Algoman age. The chief gold deposits occur in the vicinity of Tashota and Howard falls, where the quartz porphyry intrusions are most pronounced. The veins vary from mere stringers to 8 or 10 feet in width, and have various strikes and dips. At times, there is an aggregate of minute stringers through which gold-bearing solutions have passed.

Examination of thin sections of the ore shows that the gold occurs along dark seams of crushed quartz, calcite, chlorite and pyrite. The gangue consists largely of fractured quartz with considerable calcite, chlorite and some biotite. Pyrrhotite and pyrite are abundant in the deposits, while tourmaline and chalcopyrite are present in several veins. The gold is usually found in contact with some of the sulphides. Numerous fine grains of native copper were seen near the surface of the Wells vein, and in other quartz veins immediately west of the Tashota gravel pit. Finely disseminated bismuthinite occurs in the Devanney deposit, and on the Knapp claim, which lies two miles south of the Tashota gravel pit, also in several narrow quartz stringers which cut the rusty rhyolite schist to the east of Metcalfe lake. Five quartz samples, some containing bismuthinite taken to the east of Metcalfe lake gave no values in gold. The Knapp veins in addition to bismuthinite contain some graphite or molybdenite. A gray mineral from the Devanney vein gave a reaction for tellurium. Fluorspar occurs finely disseminated in a vein near the crossing of the railway and Tashota creek, a sample from which gave no values in gold.

Origin of the Gold Deposits

In northeastern Ontario most of the gold deposits are believed to be of Algoman age. At Kowkash and Tashota the gold is found near the porphyry intrusives and, at times, the veins run from the porphyry into the adjoining schists, which would suggest a similar relationship between the veins and the intrusives. The

[7] Report Ont. Bur. Mines, Vol. XVIII, 1909, p. 252.

porphyries in this area, which are probably apophyses from the underlying granite masses, also resemble the Algoman rocks in other parts of the Province.

The cooling of these acidic rocks was probably accompanied by shrinkage and faulting in the porphyry and adjacent rocks. These fractures were then filled by gold-bearing solutions, which in all probability represented the end product of the porphyry intrusions. The veins have since been enlarged in places by replacement of the country rock.

Pyrrhotite, tourmaline, biotite and other minerals suggest that the veins were formed at a high temperature and pressure and at a great depth.

Description of Gold Claims

The various claims on which gold has been found, although not surveyed, are approximately located on the accompanying map for convenience, and may be described as follows:

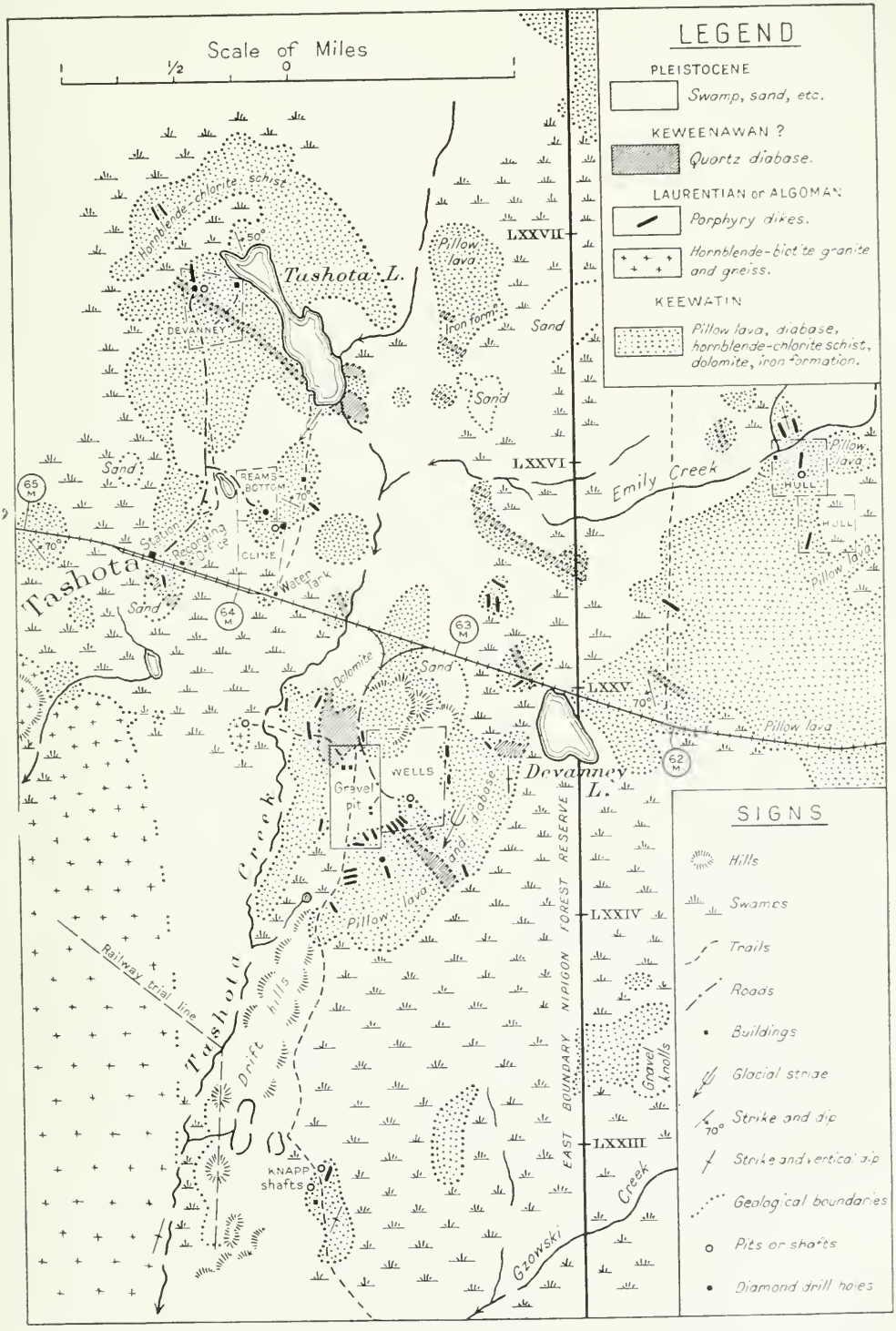
King-Dodds

The original gold find which caused the rush to the area was made on the King-Dodds claim T.B. 2424, about three-quarters of a mile east of Howard falls, on the Kawashkagama river. The quartz vein strikes 10° south of east and dips 75° to the north, thus conforming in strike and dip with the country rock. The wall rock is pillow lava (meta-basalt) altered in places to schist. Numerous quartz porphyry dikes, up to 30 feet wide, occur on the claim. The vein has been traced 100 feet on the surface, over which it will average three inches in width. The quartz is white, somewhat glassy in appearance and largely free from sulphides. An abundance of free gold occurred for four or five feet along the vein on the surface next the hanging wall. Lying along the north side of the quartz is a rusty schist band, six inches wide and heavily impregnated with iron pyrites.

The claim was optioned to T. B. Caldwell of Lanark and Messrs. Fraser and Orn, who did considerable stripping and sinking. In sinking, the showing of gold disappeared in about three feet. When work was suspended early in November, 1915, the shaft was 16 feet in depth, where the vein was two inches wide with a foot of pyritous schist, carrying low gold values, on the foot wall. Work was resumed again in November, 1916. At a depth of 40 feet considerable visible gold was again encountered, and favourable gold assays were obtained from other parts of the vein, which is lenticular, varying from a minute stringer to five or six inches in width. The schist adjoining the vein is well mineralized and carries gold values. During the summer the Tash-Orn Mines Limited, intended installing a small boiler, steam drill and pump. The shaft which is at present 56 feet deep, will be continued and drifting and cross-cutting done.

Richardson-Loudon-Ogilvie

During the first week in October, 1915, gold was found on Claim T.B. 2599, near the first rapids on the Kawashkagama river two miles below the junction of Johnson creek. The quartz vein is narrow, averaging about two inches in width over a length of 200 feet. The vein strikes south 85° east, and dips about 70° to the south. The rock is Keewatin pillow lava, and near the vein is a biotite



Plan showing the topography and geology in the vicinity of Tashota, N. T. C. railway. The Wells, Hull, Devanney, Cline and Reamsbottom claims are located approximately.

granite dike six feet wide. Coarse gold could be seen in six or seven places along the vein, and pyrite is also present. Rock outcrops in this vicinity are scarce, but further trenching may reveal larger auriferous quartz veins.

Devanney

In the autumn of 1915 a little visible gold and encouraging gold assays were obtained from the Devanney claim near Tashota, which is 22 miles west of Kowkash station. This resulted in much staking and other gold finds being made in the vicinity of Tashota.

The Devanney claim, T.B. 2650, lies about one mile and a quarter north of Tashota station on the northwest shore of Tashota lake. The main vein has a tortuous course along a general northwest and southeast direction, and dips from 50° to 80° to the southwest. The vein is lenticular, varying in width from a few inches to 8 feet and is traceable, intermittently, for about 1,000 feet. Adjacent to the vein, in places, are other narrow parallel veins. The white quartz has occasional narrow dark bands parallel to the walls, and resembles the "Rea" vein at Porcupine, described by A. G. Burrows in his report on that area. The dark seams consist of tourmaline, pyrrhotite, pyrite and crushed quartz. Certain parts of the vein comprise a mixture of schist and quartz, which are heavily impregnated with pyrrhotite, pyrite and tourmaline with smaller amounts of chalcopyrite, mica and chlorite. A very little visible gold, a telluride and bismuthinite are also present. The wall rock, a Keewatin greenstone, is entirely altered to chlorite, calcite and quartz, and is cut by narrow quartz porphyry dikes.

The property was under option to the Tash-Orn Mining Company which did considerable stripping, sinking of test pits and diamond drilling during the summer of 1916. Three diamond drill holes were put down in the vicinity of the 20-foot shaft to test the vein at vertical depths of approximately 100, 150 and 250 feet respectively. The vein where cut in each case was about eight feet wide, but the gold contents were reported to be low.

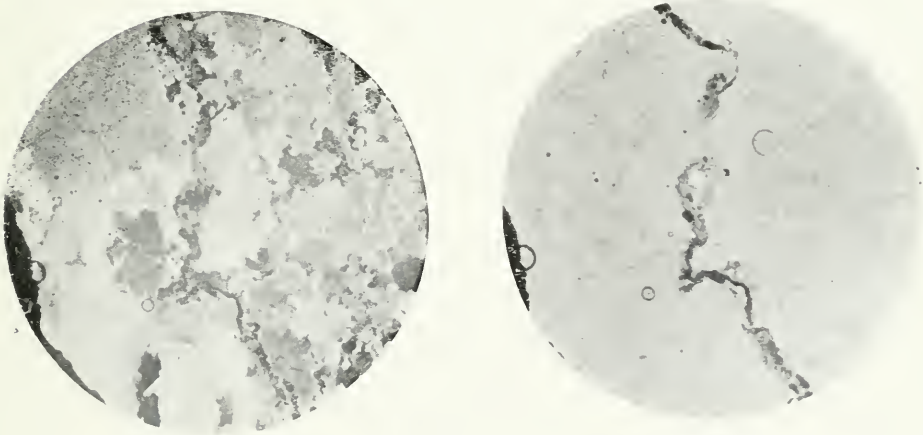
Wells

The Wells claim, T.B. 2892, is situated in the Nipigon Forest Reserve about one mile and a half southeast of Tashota station. Gold was discovered on this claim June 23rd, 1916, by Robert Wells of Tashota, who sold under option to the Tash-Orn Mines, Limited, for $25,000.

The rocks on the property are chiefly Keewatin pillow-lava schists, which have a general strike of 30° east of north and dip vertically. These are cut by narrow, altered quartz-porphyry dikes, probably of Algoman age.

A shaft was commenced on a lens of quartz, several feet in extent and carrying visible gold. Running north from this lens on the surface there are numerous parallel quartz stringers through which gold solutions have circulated. To the southwest of the shaft, small lenses of quartz can be traced for about 90 feet. The shaft was sunk vertically to a depth of 100 feet and visible gold, sometimes coarse in character, was encountered to this depth in various parts of the vein. A shipment of 700 lbs. of ore from the shaft at a depth of 30 to 35 feet was

General view of the Wells, June, 1917, one year after the discovery of gold on the claim. Looking east from the railway ballast pit; shaft house on the left.



Crossed Nicols. With Polarizer.

Photomicrographs of a section of Wells ore showing secondary fracturing of the primary quartz, along which gold, calcite, pyrite and chlorite have been deposited. The black areas along the fracture are gold and pyrite. Magnification 20.

reported to give, on assay $20 of gold to the ton. At a depth of 92 feet drifts have been run to the north on the numerous parallel veins, and to the southwest following the irregular strikes of the lenses, and in addition some cross-cuts have been made. The vein is greatly brecciated, the gold generally occurring along the dark fractures, which are filled with crushed quartz, calcite, talc, chlorite and pyrite. Some native copper is present in the vein at the surface, while chalcopyrite, pyrrhotite, tourmaline and sericite occur in varying quantities. The deposit has been enlarged by the replacement of the country rock. The mineralized schists adjoining the veins and between the lenses sometimes carry gold values, but often they do not contain any gold. Some ore has been developed, the length of the shoot on the first level being longer than it is on the surface. The ore is reported to average $5.00 of gold to the ton. At present, June 12th, 1917, the shaft is 120 feet deep, and it is expected to be down 200 feet by July, 1917.

The property is equipped with a small plant including boiler, 2-drill compressor, hoist, cage, assay office, and necessary buildings for a force of 50 men. Fortunately for the company a siding of the National Transcontinental railway runs within a quarter of a mile of the property. M. Summerhayes of the Porcupine Crown mine is consulting engineer.

The Tash-Orn Mines, Limited, is capitalized at $3,000,000; the officers of the company are: Joseph Castelberg, president; John L. Orn, managing director.

Hull

Late in November, 1916, a discovery of visible gold was made on the Hull claim, K.K. 92, which is situated about two miles northeast of the Wells, or about a mile north of mileage 61 on the railway. Messrs. Kipper, Rivett and Goad are interested in the claim.

The rock is Keewatin pillow-lava schist, which has been intruded by a few gray quartz-porphyry dikes. The deposit consists of lenses of quartz and parallel quartz stringers traceable for a few hundred feet, and having a total width of three to eight or more feet. The vein system strikes a little west of north, thus coinciding with the strike of the country rock, and dips about 45° to the west. During the winter of 1916-17 an inclined shaft was sunk on the vein to a depth of 50 feet, but this was full of water at the time of the writer's visit. However, much visible gold was seen on the footwall side of the vein at the collar of the shaft, and considerable free gold was reported to have been encountered at various places, often in vugs, in sinking. Mr. Hull also reported that a chipped sample across five feet taken at a depth of 15 feet in the shaft assayed $28 of gold to the ton. Much pyrite and tourmaline are present, while chalcopyrite and pyrrhotite are less prominent. The gold usually occurs along dark seams in the quartz containing talc, sericite, chlorite, etc. A little native copper was found in the shaft near the surface.

A similar-looking deposit, and probably a continuation of the above, extends southerly across the adjoining Hull claim, K.K. 90. In the southwestern part of the claim, where the principal workings have been carried on, there are lenses and stringers of quartz in mineralized green schist at the contacts of a quartz-porphyry dike. Occasionally the veins extend into the porphyry. Visible gold

was found in this part, and gold colours can be panned from much of the quartz and mineralized schist.

At present, June, 1917, stripping, test-pitting and sampling are being carried on.

Hendrickson

The Hendrickson claim, K.K. 15, is situated on the south shore of Hendrickson lake, at mileage 69½ on the east boundary of the Nipigon Forest Reserve. On the east central part of the claim and surrounded by swamp, there is an exposure of rusty quartz-porphyry or rhyolite schist, about 100 feet by 50 feet, with a fringe of Iron formation of pyritic black slates on the north side. The rhyolite has been intruded by lenses and stringers of quartz, through which zinc blende and iron pyrites are finely disseminated. The quartz has been greatly fractured, the

Prospecting on the Hull vein, KK 90, June 1917.

dark seams being filled with talc, chlorite, calcite, pyrrhotite and other minerals. Gold was seen in the quartz closely associated with zinc blende. It is the intention to thoroughly prospect the deposit. The rhyolite formation is extensive in the area, and the finding of visible gold in this formation may lead to further prospecting in these rocks.

Cline

The Cline claim, K.K. 61, is situated immediately east of Tashota on the north side of the railway. Here, deep trenching has revealed an altered iron formation band, four feet wide and consisting of alternating layers of "sugary" quartz and some magnetite, with secondary pyrite bands up to two inches in width. Considerable gold could be seen in rusty slickensides over a length of six feet on the surface. The Tash-Orn Mines Limited, who have optioned the claim, sank an inclined shaft to a depth of 48 feet on the deposit and bored a diamond drill

hole, 165 feet in length, at an angle of 45° towards the deposit. The company intend installing a boiler and resuming operations in the near future.

Gold Values in Other Parts

In addition to the gold deposits already described, gold has been panned and low gold values obtained from numerous other claims in various parts of the area. On the Reamsbottom claim, T.B. 2857, which lies immediately north of the Cline, gold values were found in a narrow, rusty Iron formation band consisting of alternating layers of "sugary" quartz and magnetite, which strikes southeasterly, and dips 70° to the northeast. The formation contains small amounts of pyrrhotite, pyrite, chalcopyrite and native copper, and is cut by minute secondary quartz veins. The Tash-Orn Mines Limited, bored a diamond drill hole, 300 feet in length, at an angle of 70° from the horizontal towards the deposit, after which all work was suspended.

On the McKinnon claim, which lies two claims north of the Devanney is a quartz deposit, 25 feet wide in places, containing a narrow layer of disseminated galena with some zinc blende and chalcopyrite. A sample of these sulphides gave, on analysis, $1.00 of gold and 11 ounces of silver per ton.

In the vicinity of Hull lake low gold values occur in quartz veins on the contact of the rhyolite and hornblende schists.

On the Knapp-Hendrickson claim, two miles south of the Tashota gravel pit, considerable trenching and several shallow test pits have been sunk on numerous parallel quartz veins in green schists which are intruded by minute tongues of porphyry and diabase. Both the veins and the adjoining schist are well mineralized with pyrite and pyrrhotite, while molybdenite, graphite, bismuthinite and native bismuth (?) occur in smaller quantities. No visible gold has been found, but encouraging gold assays have been obtained.

Samples giving $1.00 to $2.00 of gold per ton were obtained from numerous veins in various parts of the map sheet.

Iron

Several iron ore deposits occur on the Onaman iron range in the vicinity of Paska and Kowkash stations. These were examined in detail by E. S. Moore in 1907[8] and 1908[9] for the Ontario Bureau of Mines. He found the ore to occur in two bands, called the northern and southern ranges, the former extending for nine miles, and the latter three miles, in an east and west direction. The principal deposits, viz.: the Maple Leaf, Height of Land, Winter Camp and Miller deposits on the northern range, and the Bain deposit on the southern range, are described by Moore in his report, and their locations are shown for convenience on the map accompanying this report. The Winter Camp and Miller deposits were diamond-drilled to a depth of 351 and 139 feet respectively, the core encountering material that varied very little from that occurring at the surface. Numerous bands of ore, a few inches in width, will run 67 per cent. of iron, but these are narrow and interbanded with too much slate, greywacké and tuff to be of economic

[8] Rep. Ont. Bur. Mines, Vol. XVII, 1908, pp. 170-189.
[9] Ibid, Vol. XVIII, 1909, pp. 196-253.

importance. Moore collected a sample from an outcrop about 15 feet across near the eastern end of the southern range which, on analysis, gave the following:

	Per cent.
Total metallic iron	55.79
Iron in ferrous condition	10.94
Silica	37.10

About one-half a mile west of the latter outcrop, and probably on a portion of the same band, is a jasper and magnetite formation which Moore estimates would run from 30 to 40 per cent. of metallic iron across a width of 50 feet. He regards this vicinity as one of the most favourable spots for drilling on the range. It lies two miles and three-quarters directly south of Paska station.

Iron Pyrites

In the preliminary report on Kowkash in 1915 it was stated that the prospector should be on the lookout for iron pyrites. When examining the area in 1916 the mineral was found to be widely distributed and to occur, occasionally, in such quantities as to warrant further exploration.

A pyrite deposit that can be worked at a profit must contain at least 35 per cent. of sulphur, be free from arsenic, and not contain too many impurities such as lead and zinc, and must be of good roasting quality. It should also be of sufficient size to maintain a constant supply, and favourably situated for transportation facilities.

The prices vary from 10 to 13 cents per unit of sulphur. A free roasting ore containing 40 per cent. of sulphur, furnace size, is worth at present about 13 cents per unit, which is equal to $5.20 per ton laid down at a plant. At present there are three acid-making plants in operation in Ontario, viz.: the Nichols Chemical Co. at Sulphide, the Grasselli Chemical Co. at Hamilton, and the Algoma Steel Corporation at Sault Ste. Marie; the former two are treating customs ore. Much of Ontario's production is shipped to United States ports on the great lakes for use south of the line.

Iron pyrites is used chiefly in the manufacture of sulphuric and other acids, in the making of sulphite pulp from wood, also fertilizers, and in the refining of petroleum, etc. During recent years there has been a good market for pyrite because of the demand for sulphuric acid in the manufacture of explosives.

The more important deposits which are located on the map will be briefly described. They appear, in most cases, to be chemical sediments formed at the time the Iron formation, rhyolite schist or volcanic tuffs were being laid down.

Whitefish Lake Deposit

A prospector, Phillip Gagnon, discovered a pyrite deposit five miles to the southwest of Paska station, on the south shore of the extreme northeast end of Whitefish lake. The pyrite occurs about 300 yards south of a syenite hill, in black slates of the Iron formation type, which strike southwest and northeast. Under three feet of water, and about 15 feet from the shore, are two places which show massive pyrite, apparently of good quality and over a width of four feet. It grades, at the sides, into black slates covered by gossan in places and containing

much disseminated pyrite, often in the form of rounded nodules. Some magnetite and pyrrhotite and a little chalcopyrite are also present in parts of the formation. A sample of massive pyrite, collected from under the water, was found, on analysis, to contain no gold or nickel. The deposit warrants further exploration.

Lake St. Marie Deposit

A wide Iron formation band of varying strike and dip occurs in the rhyolites around lake St. Marie, which is two miles to the southeast of Redmond station. The rocks have been greatly brecciated, permitting the circulation of sulphide solutions. This may be the original Trombley iron deposit referred to by E. S. Moore,[10] but it is now staked by Russel and Dwyer. Within 100 yards of the northeast shore of the lake, trenching has revealed a pyrite band three feet in width. A chipped sample across three feet yielded, on assay, 31.3 per cent. of sulphur and $2.40 of gold to the ton. There was not enough work done to disclose the extent of the deposit.

Coleman Deposit

D. Coleman, a prospector, has located a pyrite deposit one-quarter of a mile north of mileage 55.7 on the railway. At this locality on the side of a large hill of cherty-looking rhyolite, is a vein-like deposit 5 feet in width containing considerable pyrite. A piece of the pure pyrite gave, on assay, $2.00 in gold to the ton. About 100 yards west of the pyrite showing, and on the south shore of a pond is a massive pyrrhotite body, 5 feet or more in width, from which samples gave, on assay, no values in gold, platinum or nickel.

Ryan Pyrite Boulder

Running north from mileage 49.75 on the railway near Paska is a surveyed trial line, which has been used as a trail by prospectors and trappers. On this line two miles north of the railway is an angular boulder of pyrite, 5 feet by 3 feet by 4 feet, lying in the rusty sand. The boulder contains a high percentage of sulphur. A sample from the boulder was found, on analysis, to contain no gold or nickel. Judging that the boulder had not been transported any great distance by the ice sheet, a search was made to the northeast, the direction from which the ice came, to locate the deposit "in place." This resulted in the finding of deposits of considerable extent by McCann and Gravelle.

McCann Deposit

Mr. McCann has done several hundred feet of trenching near the III-mile post of Code's meridian line to Howard falls, in an endeavour to locate a pyrite deposit. The stripping has revealed gossan in the form of rusty sand and limonite below which is considerable pyrite and a mixture of pyrite and pyrrhotite, somewhat interbanded, in a cherty quartz porphyry and altered iron formation. The deposit across 50 feet would run about 20 per cent. of sulphur, there being a much larger amount of lower grade material. A sample of the massive sulphides contained no gold or nickel.

[10] Rep. Ont. Bur. Mines, Vol. XVII, 1908, p. 181.

It was reported that considerable pyrite was found on the Gravelle claims, in this vicinity.

Willet Lake Deposit

Pyrite was discovered by the writer on the small pond four chains east of the east end of Willet lake, while surveying the route. The pyrite occurs disseminated through a "sugary" quartz-schist which strikes N. 70° W. and dips vertically. Ten feet of the deposit would run about 25 per cent. of sulphur, a sample of which showed gold to be absent. If some trenching were done in this vicinity a workable pyrite deposit might be located.

Pyrrhotite

A few large bodies of massive pyrrhotite occur in different parts of the area, the locations of which are shown on the accompanying map. The deposits are of no commercial importance, but are mentioned owing to 40 or more claims having been staked in the vicinity of Marshall lake in 1912, and two years' assessment work being done on them in search of nickel and platinum. The largest body seen lies on the south central shore of Marshall lake, where an open cut through shallow gossan reveals 15 feet or more of pyrrhotite which contains a small amount of pyrite and quartz. Seven pieces of pyrrhotite from different parts of the open cut gave no value for nickel, platinum or gold. The rock directly adjacent to the sulphide is iron formation of the "sugary" quartz type, with little magnetite. A mile and three-quarters northeast of Marshall lake, near Lower Meta lake, considerable work has been done on a rusty hornblende-mica schist containing much disseminated pyrrhotite. Samples from here also showed an absence of platinum and nickel. The 8-foot pit, three quarters of a mile east of mileage LXXXIV on the east boundary of the Nipigon Forest Reserve, was probably sunk during the same year. A sample, consisting largely of pyrrhotite with some pyrite and magnetite, an altered iron formation, showed no gold or nickel values. The pyrrhotite mass on the south shore of the pond at mileage 55.7 on the railway is also lacking in gold, platinum and nickel. The pyrrhotite mass at Rupert falls, Kawashkagama river, is reported to carry no nickel or gold. It would therefore seem that the pyrrhotite bodies in this area are not promising for gold, nickel or platinum.

Building Stone

The red and gray biotite and hornblende granites along the railway in the vicinity of mileage 57 and 71 are massive and jointed, and appear to be of a quality suitable for building stone. However, they are situated too far distant from the populated areas to be of value at present.

Travertine and Marl

A deposit of soft, white calcium carbonate or travertine, at least 20 feet thick in places, occurs in Red Paint lake, half a mile from Paska. The deposit is more fully described under the heading Pleistocene.

White marl, with a few scattered white shells, occurs in a small pond half a mile to the southeast of the Tashota gravel pit, but the thickness of the deposit

is not known. Marl is now little used in the manufacture of cement; however, it might at some time be employed in the agricultural portion of northern Ontario as a dressing for the soil.

V. CONCLUSION

The geology of the Kowkash gold area is, in a general way, similar to the geology in the other gold areas of northern Ontario. Numerous quartz veins carrying low gold values occur in the schist in many parts of the area, and at present gold can be seen on eight claims, some of which are widely separated, and in considerable amount on some of these. Prospecting as yet, has been largely confined to the surface, the deepest shaft (June, 1917) being 120 feet, on the Wells property near Tashota, where the principal development work has been done. No bullion has come from the area as yet, but some low-grade gold ore has been blocked out on the Wells claim. Several diamond drill holes have been bored on three claims. Prospecting is aided by the excellent transportation facilities.

In prospecting the surface for gold, one should trench in the green schists near the porphyry dikes and in the vicinity of the small granite intrusions; and, if possible, work should be concentrated on the more promising deposits. Other gold finds and ore shoots will undoubtedly be located. At the time of writing (June, 1917) the greatest activity is centered around Tashota.

Some of the iron pyrites deposits in the area would justify further exploration. The iron pyrites might be used in the making of sulphite pulp at the pulpwood mills in northern Ontario.

Silver in the area was obtained on assay in only one sample. However, since there are large areas of diabase around Lake Nipigon,[11] and since silver occurs in considerable quantity with the diabase at Silver Islet and Silver Mountain, 150 miles to the southwest, it would seem advisable to prospect these diabase areas immediately west of the area for silver.

[11] See map of Nipigon Lake Basin accompanying Memoir No. 1, 1910, Geological Survey of Canada, Ottawa.

LONGUELAC TO JELLICOE AND ORIENT BAY

By A. G. BURROWS

Introduction

The writer was instructed in June 1916, by T. W. Gibson, Deputy Minister of Mines, to make a general examination of an area lying along the Canadian Northern railway between Longuelac and Jellicoe stations. The west boundary of this area, which is the east boundary of the Nipigon Forest Reserve, is about 24 miles east of Lake Nipigon. The country is situated near the height of land, and is drained partly by the waters flowing into Lake Superior and Lake Nipigon, and partly by those flowing into James bay. The examination was mainly intended to inquire into the possibilities of the country for the occurrence of valuable minerals, and as a field for the prospector. The writer was ably assisted during the ten weeks spent in the field by R. H. Hutchison, of the Sudbury Mining School. Two weeks were spent in examining the schistose areas in the vicinity of Long lake and McKay lake, and as these bodies of water had been surveyed, it was possible to locate fairly well any points referred to in the report. It was then thought advisable to make a micrometer and compass survey of the routes travelled to the west of Long[1] lake, since these were only shown in a sketchy manner on the available maps. Joe Feeteau and Duncan Finlayson of Longuelac were employed as canoemen in this survey, and their experience in looking up trails, etc., was of great service.

A micrometer survey was made of nearly the whole canoe route from Devilfish lake to Jellicoe; the route from Jellicoe northwesterly to the Sturgeon river, which was followed upstream to its headwaters; the route from the upper Sturgeon to Wintering lake over the height of land, and from Wintering lake to the English river by way of Little Long lake.

Early Exploration in the Area

The first report on this area was made in 1870 by Robert Bell[2] for the Geological Survey of Canada. Surveys were made of McKay lake, the route from this lake to Long lake, Long lake, and the route northerly to Devilfish lake. Bell described the geology along the route and mentioned the possible economic resources.

E. V. Neelands,[3] who was a geologist with one of the exploration parties sent out by the Ontario Government in 1900, described the geology of the country round the north part of McKay lake and the portage route to Long lake, and also that of the lower part of Little Long Lake river.

[1] This name, like others, has been given to several lakes in Ontario. In this volume, for example, Long lake near Sudbury, where a gold deposit has been worked during recent years, is described by M. B. Baker. Such duplication of names tends to confusion, but it is difficult to avoid it, owing to the large extent of the territory embraced in the Province of Ontario, and to the fact that a change in established names is undesirable.—W. G. M.

[2] Report, Geological Survey of Canada, 1870-71.

[3] Report of Survey and Exploration of Northern Ontario, 1900.

A. L. Parsons[4] in the Eleventh Report of the Bureau of Mines also described the geology of the route from McKay lake to Long lake.

A. P. Coleman[5] described the Nipigon iron ranges, which he traced from

Post of the Hudson's Bay Company, Long lake.

Indians at Longuelae station.

Lake Nipigon to within a few miles of Beatty lake (Wawong), a few miles

[4] Geology of Thunder Bay–Algoma Boundary, 17th Rep. Ont. Bur. Mines, 1908.
[5] Iron Ranges East of Lake Nipigon, 17th Rep. Ont. Bur. Mines, 1908.

northwest of Jellicoe. The same author[6] gave a very general description of the geology of Long lake and the Iron formation on Little Long lake.

No geological work had been done in the country west of Little Long lake almost as far as Jellicoe.

The geology of the region to the west of Upper Sturgeon river, examined in 1901 by W. A. Parks, is shown on the geological map of portions of the Districts of Algoma and Thunder Bay, No. 964, published by the Geological Survey of Canada.

Alfred W. G. Wilson made a report on the Geology of the Nipigon Basin, Ontario, in which is included the geology of part of the area along the west side of the map accompanying this report.[7]

Drift-covered Areas

A considerable portion of the area is covered with drift, and a knowledge of the geology is largely derived from an examination of the rocks which occur along the shores of lakes and rivers. A great part of the drift-covered portion consists of deposits of sand and gravel, particularly in the region to the northwest of Little Long lake, and along the railway westward to Jellicoe. Deposits of gravel along the railway have been used as ballast for the roadbed. Stratified clay is found around the north part of Long lake, and clay land near the trading posts has been utilized for farming purposes by officers of the Hudson Bay Company and Revillon Frères. Stratified clay also occurs along the Making Ground river and Kenogami (English) river. Back from the river sandy and gravelly deposits are usually met with in the higher portions; the low flat muskeg areas are generally underlain by clay. Only a very small portion of the whole area would be suitable for agricultural purposes.

Glaciation and Topography

The general contour of the country is that of a peneplain. Marks of intense glaciation are everywhere seen where the rocks are exposed, the fine-grained greenstones and slaty rocks especially retaining the glacial markings. A general average of the strikes of glacial striations would be about S.W. One striking effect of glacial scouring can be seen on the southeast shore of Expansion lake on the Sturgeon river. Here the ice movement assisted by wave action, has gouged out the softer margins or ellipses of the pillow lava, giving a mamillary character to the outcrop.

Viewed in a general way the area examined is one of low relief, and seldom are hills seen which are more than 100 to 150 feet above the surrounding plain. Some of the country round McKay lake, and along the shores of Long lake to the south of Seven mile point, is rough and rugged, with cliffs rising abruptly from the water. According to Robert Bell the southerly part of Long lake is very rugged and mountainous, one hill rising 540 feet above the level. The elevation decreases northerly, and near the north end of the lake the country is rather low.

[6] Iron Ranges of Nipigon District, 18th Rep. Ont. Bur. Mines, 1909.
[7] Geological Survey of Canada, Memoir I, 1910.

Scene on Wild Goose lake.

Glaciation on pillow lava, Expansion lake, Sturgeon river.

The prevailing level is about 1,000 to 1,150 feet above the sea. The railway grade at Longuelac has an elevation of 1,031 feet. Going westward there is a gradual rise, with local differences to Keemle, which is 1,135 feet above sea level, and the highest point along the road from Longuelac to Jellicoe (1,082 feet). The extent of the drift and the paucity of the rock exposures are shown by the scattered and shallow rock cuts between these stations. To the west of Jellicoe rock exposures are more numerous, particularly on approaching the area of Keweenawan diabase near Lake Nipigon.

There is a marked parallelism in the main water courses, the general trend of which is northeast and southwest. It will be noted on the map that the Upper Sturgeon river, Wintering lake to Little Long lake, Long lake and McKay lake are roughly parallel, indicating the main valleys of the area.

Sand beach on Sand Lake, Sturgeon river, with characteristic forest growth.

Forest

This area is covered with a light growth of timber, which is generally too small to be of much value except as pulpwood. White spruce of fair size is often found along the river banks and low shores of lakes. Jack pine is very abundant on the numerous sand and gravel stretches, but is usually rather small. Cedar is found on some of the rivers like the Sturgeon and, where near the railway, some of it has been utilized in construction. The other common trees are poplar, balm of gilead, birch and balsam.

Traces of old fires are seen in many parts, while some small areas around Jellicoe and on Gamsby lake have been recently burned over.

Game and Fish

The tract, which has been little travelled except by exploratory parties, and Indians who make it their hunting ground, is an ideal country for the tourist, as game and fish are abundant. It is now easy of access since the Canadian Northern railway traverses it, and numerous lakes and streams offer great facilities for canoe travel.

During the exploratory trip of ten weeks along water routes, nearly fifty moose and caribou were observed by members of the party, while red deer are also reported to exist.

Wild ducks were abundant on many of the lakes, especially to the south of the railway along the route from Wintering lake to Little Long lake. A flock of wild geese was also seen on Wintering lake.

The large lakes, like McKay and Long, abound in large lake trout, while nearly all the lakes yield abundant pike and pickerel. Brook trout are caught on several streams in the vicinity of Long lake, particularly at the first falls on the English river below the lake, and on Devilfish river. Whitefish are also netted by the Indians.

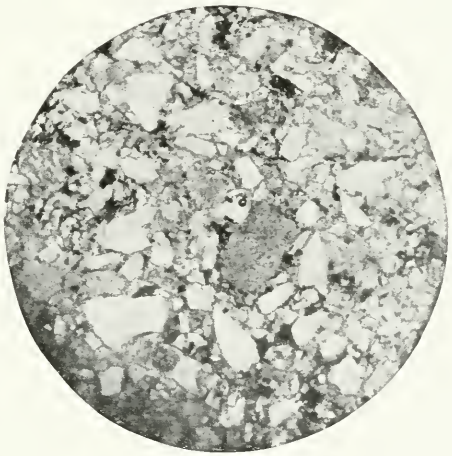
Geology

Since this examination was largely of an exploratory nature, no attempt was made to map areas in detail. However, the canoe routes and a section along the railway gave a general idea as to the geological character and distribution of the rocks. It was found that the southern part of the area included in the accompanying map is composed of granite, with some gneiss of varied colour and structure, exposures being seen on McKay, Long and Wintering lakes, and the series of lakes from Wintering to the headwaters of the Sturgeon river. On McKay lake the granite is largely in the form of dikes or small masses intruding the mica schist, but is in considerable volume in the southwest part of the lake. The same condition was observed on Long lake, about 15 miles from the north end, where for a distance of two miles, there are numerous exposures of dikes and large masses of granite in the mica schist, while to the south of this zone the granite occurs in large volume. The country along the water route to the north of Wintering lake is covered with drift, and no rock is observed until the head of Little Long lake is reached, where the rock is a hornblende schist. However, on the Upper Sturgeon river farther west, garnetiferous biotite schist, similar to that on McKay and Long lakes, outcrops; consequently it is evident that all across this area the granites are flanked to the north by garnetiferous mica schist. This mica schist, described by Bell in 1870 as "tender gray mica schist," is succeeded on Long lake and other lakes by other schistose rocks, many of which give distinct evidence of being of sedimentary origin.

To the north of the gray mica schist on Long lake, there are bands of coarse- or fine-grained hornblende schist, fine-grained mica schists, quartzose schists, ash-like rocks, agglomerates, altered diabase, thin beds of iron formation, and amygdaloidal and other basic igneous rocks, as far as Seven Mile point. Since all these rocks are quite schistose and have more or less uniform strike and dip, it is impossible to make any separation into distinct geological groups. They appear

to form part of one geological series. Somewhat similar types of rocks are seen farther west on Little Long lake, and also in the area around Jellicoe. On Little Long lake there are prominent and possibly important bands of jaspilyte or Iron formation, and fine-grained pillow lavas and altered diabase in large volume, which lie to the north of the hornblendic and micaceous schists. A large area of granite, later in age than these schists, extends southward on Long lake to Seven Mile point and westward to near the northeast end of Little Long lake, so that more of the Iron formation and lavas have been preserved on Little Long lake than on Long lake. On the Upper Sturgeon river, besides the bands of mica schist, there are outcrops of banded quartzose schists which are of sedimentary formation. Farther north, on Partridge lake, banded cherty rocks occur along the south shore, and lavas along the north shore.

South and west of Jellicoe there are exposures of pillow lavas and other volcanics, while directly north of this station at Oxaline lake there is a broad



Photomicrograph of greywacké, south shore of Oxaline lake. Magnification 20.

band of fragmental rock, much of which shows banding into coarse and fine material like greywacké. It is apparent that in the area from Jellicoe to Long lake, there is a great similarity in the schistose rocks, and that much of these is fragmental. Whether most of this fragmental material can be classed as volcanic in origin (ash, tuffs, agglomerates, etc.) or whether it may have been deposited as detritus by the weathering and erosion of other rocks, the writer is not able to state. It is apparent that igneous and fragmental rocks are everywhere intermingled, and it would be extremely difficult to separate them even if the separation were of any economic importance.

Outcrops of conglomerate, in which there is a great variety of rounded pebbles, including granite, porphyry, gneiss, greenstone, jasper, quartz, etc., occur on Beatty lake (Wawong). This conglomerate is clearly formed from material derived from weathered and eroded older rocks, and is not of volcanic origin. The latter origin might be suggested for some at least of the immense volume of fine-grained fragmentals with the lavas mentioned above.

Legend

KEWEENAWAN (?)	Diabase, in the form of sills and dikes.
Intrusive Contact.	
TIMISKAMING (?)	Conglomerate, arkose. (Lower Huronian of Coleman and A. W. G. Wilson.)
LAURENTIAN (?)	Granites, gneisses, pegmatites.
Intrusive Contact.	
KEEWATIN	Greenstone, green schists, mica schists, hornblende schists, iron formation, ash rocks, agglomerates, greywacké, slate.

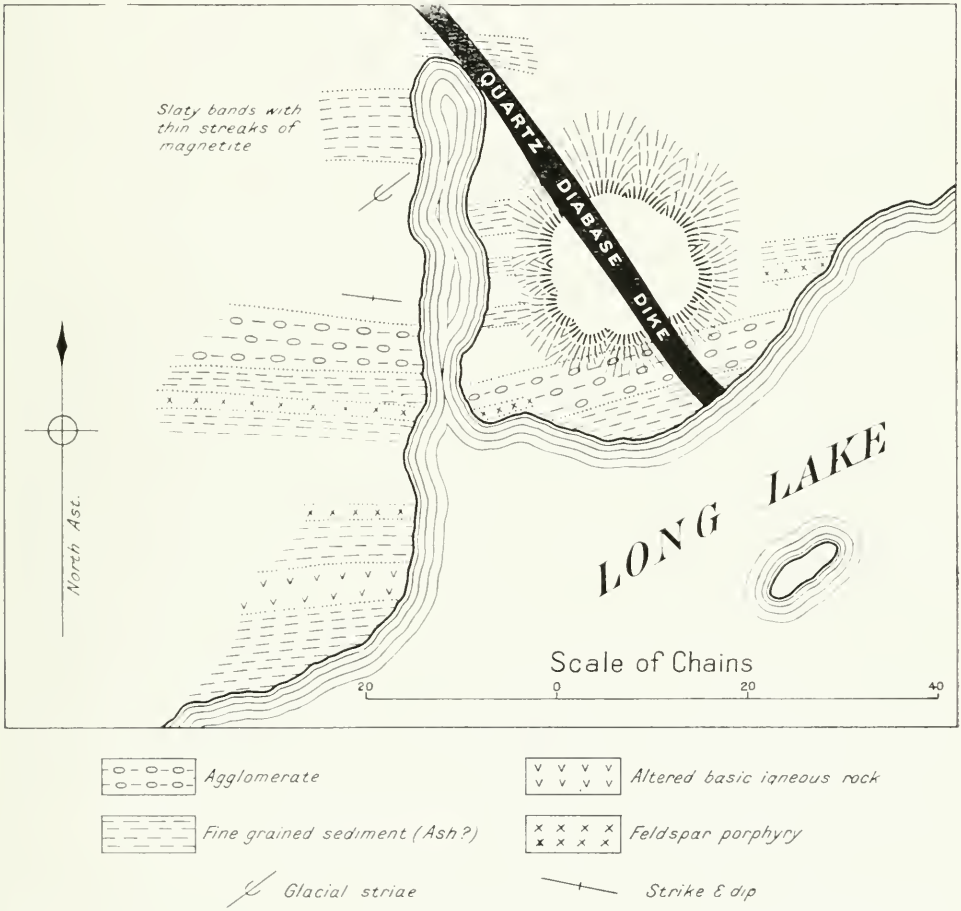
Rapids and falls on upper part of Sturgeon river.

Keewatin

From a comparison with the greenstones, green schist and associated rocks in other parts of northern Ontario which have been mapped with the Keewatin, it is probable that similar rocks in this area are of the same age. If the altered igneous rocks, such as lavas of both pillow and non-pillow structure, altered diabases and other rocks, are Keewatin, it is also likely that the great assemblage of sedimentary rocks which occur in this area are of the same relative age. These sedimentary rocks are everywhere intermingled or interbanded with the lavas.

The lavas are greatly altered, although the pillow structure is well preserved in many places. A specimen of pillow lava from one mile west of Langmuir station is dark greenish in colour, and has a clayey odour. Under the microscope it proves to be greatly altered, showing secondary feldspar (albite), hornblende, chlorite, calcite and iron ore.

A rock which resembles a diabase occurs on the south shore of Little Long lake, opposite Langmuir station. Plagioclase feldspar crystals, greatly fractured, along with quartz and a high percentage of chlorite, are recognized in thin section. This rock is likely a coarse phase of the one previously mentioned. An amygdaloidal lava occurs a mile west at the main narrows. Amygdaloidal rocks are also seen in other parts of the area. One such occurrence is on the west shore of Long lake, about one mile southwest of Seven Mile point. On a bare rocky island near the north shore of Expansion lake on the Sturgeon river, there is a



Plan of part of west shore of Long lake, showing a section of Keewatin schists intruded by feldspar porphyry and quartz diabase.

light greenish amygdaloidal rock which shows altered phenocrysts of feldspar and amygdules of quartz. This rock is a more acid type of amygdaloidal rock than that usually seen.

Good exposures of greenstone of the pillow lava type can be seen in the rock cuts northeast of Partridge lake. The rock has been much fractured and cemented with veinlets of calcite and quartz. Similar rocks occur a mile west of Jellicoe station.

Half a mile east of Expansion lake on the Sturgeon river, there is a light greenish altered igneous rock which shows laths of albite, grains of quartz and ragged masses of chlorite. The alteration has probably been from a Keewatin quartz diorite.

Long Lake

The exposures of dark coloured schists to the southwest of Seven Mile point, Long lake, indicate an assemblage of rocks of different character, but all having a schistose structure with strike from east-west to northeast-southwest. Some of these rocks are clearly of igneous origin, such as the amygdaloidal lavas and schistose greenstones, but others are as distinctly of sedimentary origin, since well-defined banding and sedimentation are in evidence. The origin of other rocks is not so clear. Much of the schist is micaceous or hornblendic, particularly farther to the southwest. The mica schist varies in colour from a black glistening rock with over 50 per cent. of biotite to a light-gray quartzitic rock with scattered flakes of biotite. The mica schist which occurs immediately north of the main granite outcrop, and is cut by numerous dikes of granite or pegmatite, is granular in character, weathering rusty brown, and is often garnetiferous. This mica schist may have resulted from the metamorphism of an impure sandstone. On the east shore of Long lake, opposite the third island, there is a light-coloured quartzitic looking rock, in which glistening scales of biotite are recognized. Under the microscope the rock has a greywacké structure, showing grains of quartz, fragments of feldspar (plagioclase and orthoclase), mica flakes, and a few fragments of basic igneous rocks. Interbanded with the micaceous schist, there are coarse and fine glistening hornblende schists which may have resulted from the alteration of igneous rocks. These schists are largely composed of greenish hornblende and quartz.

On the west shore of Long lake opposite the third island there are rocks, some of which are evidently of a pyroclastic character, occurring along a narrow deep bay stretching to the north, and also along the main shore of the lake to the north and south. Among these rocks are ash-coloured, fine-grained sediments, and coarser volcanic conglomerate showing angular and rounded fragments of light-coloured volcanics and other igneous rocks, together with banded slaty rocks evidently from some older fragmentals.

A sample of the fine-grained material having the appearance of an ash shows under the microscope abundant fragments of orthoclase and plagioclase and quartz, with the feldspars much more numerous than the quartz, in a fine matrix of chlorite, kaolin, feldspar and quartz. At the north end of the narrow deep bay there are some narrow bands of magnetite, one-eighth to one-quarter of an inch in thickness, but of no great length, interbanded with a fragmental rock somewhat like the one previously described. It contains numerous quartz and feldspar fragments in a fine groundmass with biotite, calcite and sphene. These rocks are intruded by narrow dikes of whitish feldspar porphyry and quite fresh quartz diabase. Farther south along the shore, some isolated bomb-like inclusions in the fragmental rock were recognized.

McKay Lake

Fine-grained mica and hornblende schists also occur on the northwest shore of McKay lake, while along the southeast shore biotite schist carrying garnets is prominent. About one mile southwest of Yankee bay on the lake, there is a dark schist which A. L. Parsons describes as a mica schist containing quartz and orthoclase, the grains of which minerals are surrounded or nearly surrounded by small flakes of biotite. A few minute garnets were also recognized.

Little Long Lake

Mica and hornblende schists similar to those described on Long lake and McKay lake occur near the south end of the southwest arm of Little Long lake.

Agglomerate on west shore of Long lake, opposite Third island.

One mile farther northeast the schists are distinctly banded and of a slate-greywacké type. They strike nearly east and west, and dip nearly vertically. These rocks, which are silicious, contain scattered flakes of mica, and can be traced to the northeast end of this arm, where crumpled greenish and rusty weathering bands showing crenulations and containing much carbonate are seen on a point on the west side of the lake. This rock is probably of volcanic origin. Directly north of this at the main narrows the rocks are igneous, showing pillow-lava structure and amygdules.

On the south shore of the southwest arm of Little Long lake there is a coarse-grained basic rock which is shown by microscopic examination to be an augite lamprophyre; some of the phenocrysts are fairly well preserved, but others

Camp on Little Long lake.

Sedimentary rock on west shore of southwest arm of Little Long lake.

are altered to groups of hornblende needles. Secondary feldspar and carbonate occur in the groundmass. Similar rock occurs a mile southeast of the main narrows of this lake. This rock is in the form of a dike cutting older Keewatin schists.

The description of the mica, hornblende and quartzose schists on Long and Little Long lakes is similar to that of schistose rocks in the Kowkash Gold Area which P. E. Hopkins has called the Marshall Lake series.[8]

Lawson's description of the Couchiching series[9] in the Rainy lake area is similar to that of the mica, hornblende and quartzose schists on Long and Little Long lakes. Coleman in describing the gray schists on Long lake mentions their great resemblance to the Couchiching of Rainy lake region.[10]

The age relationship between the mica and quartzose schists of sedimentary origin and the pillow lavas and other igneous rocks is not known. For the most part the sedimentary rocks stand so nearly in a vertical attitude that their relationships cannot be determined. It seems advisable to group all these rocks with the Keewatin until information is available to show that the sedimentary rocks may possibly be older than the lavas.

Iron Formation

Iron formation occurs in several parts of the area. At the first two portages on the stream above Upper Devilfish lake there is a strong local attraction, and at two places where the rock outcrops banded magnetite and silica were observed. The bands of iron ore are thin, and at the present time are not of economic importance. The rock associated with the banded iron formation is silicious, whitish and rusty weathering in places.

The largest showings of Iron formation are those at the west end of the west arm of Little Long lake, and these have been described by A. P. Coleman in a report on the Iron Ranges of Nipigon District.[11] There is strong local attraction all along the shore of this part of the lake, while the best showings of the formation are on a large island, a description of which is given by Coleman as follows:

> The most important outcrop is at the east end of a large island included in A.L. 431, where stripping discloses a width of 24 yards of iron formation intermixed with schist, some of the bands almost heavy enough to be ore. The colors at this stripping are gray and black, and there is magnetite enough to make the ordinary compass useless, so that the dial compass was resorted to; but much of the material gives a red powder, when pounded, showing the presence of hematite also. Another stripping a short distance west shows 40 yards of surface, made up of very lean iron formation, without schist, and containing some dull red jasper. The iron mineral here seems to be mainly hematite. . . .

The iron-bearing bands are associated with greenish schist and rusty weathering Arkose-like bands. On the mainland west of the island there are streaks of iron ore interbanded with coarse and fine sedimentary bands like grit and slate.

Other bands of Iron formation occur on the south shore of the bay to the south of the entrance to the west arm where the local attraction is strong.

[8] Rep. Ont. Bur. Mines, Vol. XXVI, 1917, Kowkash Gold Area.
[9] Geol. Sur. of Canada, Memoir 40, Archaean Geology of Rainy Lake Re-studied, p. 6.
[10] Rep. Ont. Bur. Mines, Vol. XVIII, 1909, Iron Ranges of Nipigon District, p. 144.
[11] Ont. Bur. Mines, Vol. XVIII, 1909, p. 146.

A few thin bands of magnetite were observed along the shore of a deep bay on the west side of Long lake opposite the third island.

Coleman[12] also refers to an iron range to the south of Battle Island lake (Partridge lake) where there are bands of sugary silica with a little magnetite striking east and west and occurring with green schist. These bands are reported to be of no economic importance. Bands of impure magnetite an inch in width are found in a few places, but most of the silica is almost devoid of ore.

Full accounts of the iron ranges to the east of Lake Nipigon are given by Coleman in his reports on this area.

Laurentian

The rocks included in this system are granites, gneisses and pegmatites; of these the granites occur in greatest volume, and are generally of a reddish or grayish biotite variety, although hornblende varieties are frequently seen. Outcrops of reddish biotite granite are frequent along the west shore of Long lake as far south as Seven Mile point. Similar rocks with gneiss occur at points between Long lake and Devilfish lake. On the southwest bay of the latter lake pink granites predominate with quartz, orthoclase, plagioclase and biotite. On the same bay there are outcrops of mica gneiss.

On Long lake, about 16 miles southwest from the railway, rocks of a granitic character with some gneiss stretch far to the south. Included in the granites and gneisses are pegmatites showing coarse crystallization of quartz, feldspar and mica.

On the east end of Mud lake, northwest of McKay lake, there is a coarse red granite composed of quartz, orthoclase and hornblende. To the west of Long lake along the railway there is a dark gray granite, gneissoid in part. It contains both mica and hornblende and a little augite, also quartz, microcline and plagioclase, with a few minor minerals like apatite. The name granodiorite might be more properly applied to this rock.

A gray granite from the shore of Sedge lake contains both biotite and muscovite with the quartz and gray feldspar.

Some of the pegmatite dikes which are very plentiful along the east shore of McKay lake, contain crystals of feldspar up to two inches in length, which with quartz make up most of the rock. Muscovite and biotite occur in small flakes.

The name "Laurentian" has been applied to the granites, gneisses and acidic rocks by various writers describing the rocks of this and surrounding areas, and, until the actual relationship to other rocks later than the Keewatin is known, the term is appropriate. A series of schistose conglomerates, now highly inclined, lying to the east of Lake Nipigon and near the Sturgeon river, has been mapped by Coleman and Wilson as Lower Huronian. In a later report Coleman suggests the similarity of this conglomerate to the Sudbury series at Sudbury and the Timiskaming series at Cobalt and Porcupine. The granites have not been found in contact with this series, and as the conglomerate series is highly schistose and similar in this respect to the Keewatin, it is possible that some of the fresh and

[12] Rep. Ont. Bur. Mines, Vol. XVII, 1908, pp. 153-4.

massive granites are really later in age than the series mapped by Coleman and Wilson as Lower Huronian, and accordingly may be equivalent to the Algoman granite in other areas.

Conglomerate (Timiskaming ?)

There is a series of conglomerate and associated arkose on Beatty lake (Wawong) which A. P. Coleman has classified as Lower Huronian.[13] This conglomerate contains numerous well-rounded pebbles and boulders of granite, porphyry, jasper, greenstone, etc., and is clearly a sedimentary deposit resulting from an accumulation of broken-down and water-worn fragments of older rocks. No contact was observed with the greenstones and green schists which also occur on this lake, but the greenstones are probably the older rocks. The presence of the jasper pebbles in the conglomerate suggests that these may have come from the Keewatin jaspilyte formation, which occurs in large volume in nearby areas. Coleman traced the conglomerate eastward from Lake Nipigon to Beatty lake, a distance of about 15 miles. In a later report Coleman suggests the possible relationship of the conglomerate and arkose to the Sudbury series at Sudbury and the Timiskaming series at Cobalt.[14] The writer noted the resemblance of this schistose conglomerate, standing at a high angle, to the conglomerate in the Kirkland lake and Porcupine areas, and suggests, like Coleman, that this may be equivalent to the Timiskaming or Sudbury series farther east. Since, however, no contacts have been reported between the conglomerate and Keewatin lavas, the age relationship of these rocks is not yet proved.

Both series of rocks have been subjected to extreme metamorphism and show schistose structure. The country is greatly covered with drift, which obscures the relationship. Coleman suggests that the narrow band of conglomerate scattered over considerable length and breadth may represent synclinal folds in the Keewatin preserved from destruction due to erosive agencies. The conglomerate is very much more metamorphosed than the granite which occurs in large volume some miles south and which has been mapped as Laurentian by several observers, but may be of Algoman age.

Acidic Dikes Intrusive into the Keewatin

Light-coloured dike rocks of a porphyritic character were observed at only a few places. On the west shore of Long lake, opposite the third island, there are a number of whitish weathering dikes which are in marked contrast with the dark-coloured schists. Conspicuous phenocrysts of gray feldspar, showing albite and carlsbad twinning, occur in the fine-grained groundmass of the porphyry. The rock is intersected by numerous quartz veinlets an inch or so in width. Near the contact with the older rocks some quartz veins are found, but, although promising in appearance, no gold was found on assay of a sample of quartz and schist. A similar dike rock of a reddish colour was seen at the south end of island No. 1.

[13] Iron Ranges East of Lake Nipigon, Rep. Ont. Bur. Mines, Vol. XVII, 1908, p. 142.
[14] The pre-Cambrian Rocks North of Lake Huron, Rep. Ont. Bur. Mines, Vol. XXIII, 1914, p. 230.

At the north end of Long lake, and just west of the railway station, there is a fine-grained, reddish, acidic dike rock that intrudes a dark greenish-gray amphibolite, fragments of which occur in the dike. There are some quartz veinlets in the dike containing copper pyrites which have attracted the attention of prospectors.

A few felsitic dikes occur just west of Kinghorn station.

One mile west of Jellicoe there is an interesting narrow dike, about a foot in width, which intrudes Keewatin pillow lava. Under the microscope it proves to be an albite porphyry showing phenocrysts of albite in a fine-grained groundmass of similar material with grains of calcite, iron pyrites and pyrrhotite. The dike contains veinlets of quartz, and in or near the quartz there are needles of black tourmaline and prismatic crystals of arsenopyrite. The dike rock with quartz veinlets gave on assay no gold.

Keweenawan (?)

Narrow dikes of fresh diabase occur in many parts of the area. From their fresh appearance and the fact that they intrude the rocks with which they are found in contact, they are presumed to be the youngest in the area. No large areas of diabase, like those around Lake Nipigon, were seen along the routes that were travelled, but one area of such diabase has been reported by W. A. Parks, and is shown in the southwest corner of the map on Parks lake, southeast of Lake Nipigon. There are several prominent dikes of diabase on McKay lake and Long lake. One of these cuts a series of fragmental rocks on the west shore of Long lake opposite the third island. It is coarse-grained, and microscopic study proves it to be a quartz diabase, consisting of plagioclase, augite and interstitial quartz with minor accessories.

On the south shore of the west bay of Little Long lake there is a fresh hornblende diabase.

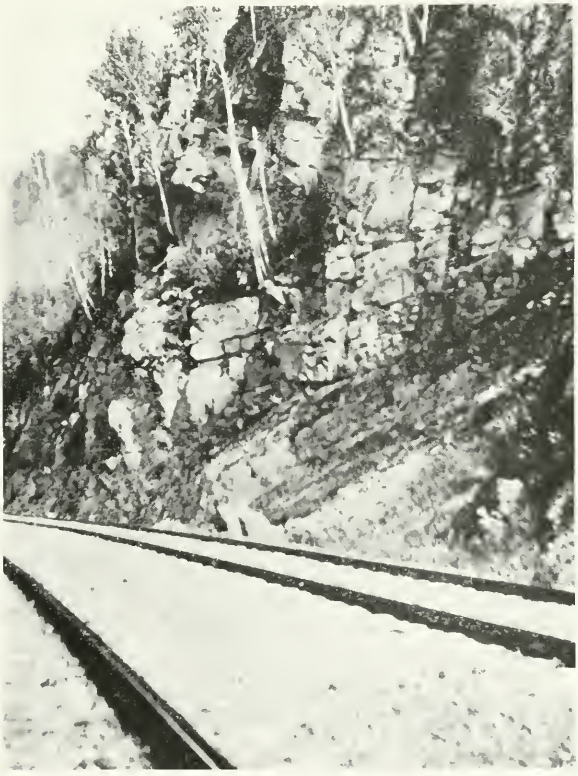
On the northwest shore of Oxaline lake, there is a coarse-grained diabase in which grains of quartz and feldspar can be recognized in hand specimens. The mineral augite is seen in thin section, so that the rock is probably a somewhat acidic quartz diabase.

Numerous narrow dikes of diabase occur in the granite in the rock cuts along the railway to the west of Longuelac station.

Pleistocene

As mentioned previously, most of the area is covered with deposits of drift, consisting of sands, gravels, clays, peat and moss. Of these the sand-gravel deposits greatly preponderate.

Stratified clay occurs in a low flat near the Hudson Bay Company's trading post on the west side of Long lake, while a sandy terrace is seen on the east side near the post of Revillon Frères. Referring to the deposits along Long lake and Kenogami river, Coleman states: "Probably the sand and clay terraces were made when the ice front stood not many miles away to the north at an early stage of lake Ojibway; or they may have been formed in a narrow bay stretching



Keweenawan diabase overlying Keewatin schist with a development of analcite and prehnite along the contact. Warneford station, Can. Nor. railway.

Photomicrograph of olivine diabase from tunnel south of Fairloch, Can. Nor. railway. Magnification 20.

southward from lake Algonquin." The same author also refers to old lake deposits of sand and gravel on Little Long lake and on Sand lake along the Sturgeon river. On the Upper Sturgeon river a sand plain indicating an old lake deposit was observed toward the north end of the long portage 12 miles below Granite lake.

Boulder clay and esker ridges occur on the summit portage from Making Ground river to Mud lake. To the southwest of Little Long lake toward the Wintering lake, there are several esker-like deposits of sand and gravel on the portages along the river. To the north of Bankfield, along the canoe route from Devilfish lake to Wild Goose lake, there are morainic ridges of sand and gravel containing numerous small kettle lakes. Much of the shores of Wild Goose lake consists of boulder beds which may have been derived from morainic material.

Economic Geology

During the examination of this area no deposits of present economic value were observed along the routes travelled. However, since a large part of the area is underlain by metamorphic rocks which have been altered to schists, deposits of importance may still be found. One is struck, however, by the scarcity of light-coloured intrusive rocks of a porphyritic character, such as quartz or feldspar porphyry, which are so prominent in areas like Porcupine and Kirkland lake, and which have proved of importance for the occurrence of gold.

Gold

There are a great number of white quartz veins in parts of the area, especially around McKay and Long lakes, which are of no value. These are narrow and of white quartz, usually carry no metallic minerals, and are simply the result of the healing of the cracks which have been formed in the country rock.

Low values in gold were obtained in samples taken from quartz veins in rock cuts from Partridge lake westward to Jellicoe.

A three-inch stringer containing quartz, specular iron ore, copper pyrites and iron pyrites, from a rock cut at mileage 145, near Kinghorn, gave on assay $1.20 in gold per ton.

In a rock cut one mile to the west of Jellicoe there are several lenticular masses of quartz in the basalt. One of these, 15 inches in width, gave on assay $4.00 in gold per ton. A sample of albite porphyry with quartz, tourmaline and arsenical pyrites from the same rock cut gave no gold values on assay.

Several assays were made from quartz veins and schist from the north shore of Hutchison lake, at the headwaters of the Devilfish river, the highest value in gold obtained being 80 cents per ton.

Gold values up to $2.00 per ton were obtained from specimens of quartz, schist and iron pyrites from the shores of the west arm of Little Long lake.

A property known as the Edy claim, near the main narrows of this lake, was prospected several years ago. Visible gold is reported to have been obtained from the quartz vein on the shore of the lake. The vein cannot now be seen, being covered with sand and gravel, but chips from a number of pieces of rusty quartz showing iron pyrites and tourmaline gave on assay 80 cents per ton in gold.

Copper and Molybdenum

There are some showings of copper pyrites in a reddish dike rock on the north shore of Long lake just west of the station. These have attracted the attention of a prospector who has done some trenching and blasting, which showed up a little molybdenite in addition to the copper pyrites.

While at Long lake the writer was shown a fine sample of molybdenite in a reddish granite which was reported to have come from the southwest part of Devilfish lake, but no authentic information could be obtained from the Indians who brought the sample to the trading post.

Iron Ore

The most promising iron formation is that on the west arm of Little Long lake which has been described by Coleman,[15] but until there is a demand for the low-grade jaspilyte iron ore of the Nipigon area, the deposit will not be of economic importance.

Acknowledgments

The writer is greatly indebted to E. H. McLeod, manager of Revillon Frères' post at Longuelac, for kindnesses extended while the party made this place its headquarters.

Plans of railroad surveys along the route examined, furnished by the Canadian Northern railway, proved useful in the field and also in the compilation of the map (No. 26b.) accompanying this report.

ORIENT BAY TO JELLICOE

Following are a few notes embodying the results of observations along the line of the Canadian Northern railway from Orient bay to Jellicoe.

Orient Bay station (elevation 858.66 ft.) is at the south end of Pijitawabik bay, the southeasterly extension of Lake Nipigon. From this station northerly as far as Fairloch station the route is quite scenic, since the railway skirts the shore of the bay with increasing elevation along the side of a diabase ridge, at one place passing through a long tunnel in the diabase. This rock, which is of Keweenawan age, when examined under the microscope proves to be olivine-bearing, showing the typical ophitic structure, with a development of labradorite in augite, and also numerous grains of olivine.

On a prominent hill to the east of Fairloch the Ontario Government has established a lookout station in connection with its fire-ranging system. To the northeast of Fairloch with increasing distance the bold topography afforded by the Keweenawan diabase gradually gives place to a more rounded and flatter surface contour as more of the Keewatin rocks are encountered.

[15] Rep. Ont. Bur. Mines, Vol. XVIII, 1909, Pt. I, p. 146.

Analcite and Prehnite

Southwest of Warneford station Keewatin greenstone outcrops, while a few yards from the station there is a cliff of columnar diabase about 60 feet high overlying greenstone schist at a low angle.

Along the contact of the diabase and schist secondary minerals have been developed. Dull white crystals of analcite, showing well developed icositetrahedral form, occur in the decomposed contact zone. Some of the analcite is also more massive along with a very light greenish mineral which E. Thomson of the Mineralogical Department of Toronto University recognized under the microscope to be the acid silicate, prehnite. Of the two minerals the prehnite is of earlier

Pigitawabik bay, lake Nipigon, as seen from the Canadian Northern railway.

crystallization, the analcite being isotropic, with optical anomalies, and the prehnite showing very brilliant interference colours. An analysis of crystals of analcite made by W. K. McNeill, Provincial Assayer, shows the following composition: SiO_2, 50.98 per cent.; Al_2O_3, 23.2 per cent.; Na_2O, 10.42 per cent.; CaO, 2.10 per cent.; MgO, 1.16 per cent.; H_2O, 7.45 per cent. This is a very interesting occurrence of analcite, since the mineral has hitherto been reported in only one locality in the Province, namely, at Heron bay, Lake Superior, where it occurs as a constituent of a rare rock to which Dr. Coleman gave the name "heronite." Prehnite is more widely distributed, having been found along the north shore of Lake Superior in the copper-bearing formations.

One-half a mile east of Warneford, near the crossing of the Blackwater river, which the railway now roughly follows as far as Blackwater lake, the last outcrops along the railway of the Keweenawan diabase showing vertical columnar structure are observed. Beyond this, there are Keewatin fragmental rocks with a general strike of N. 65° E. and dip 75° N. to within a mile west of Beardmore, where there are greenstone schists. The fragmental rock contains a number of quartz veins which, however, on assay contain no gold values. At the east end of the siding at Beardmore station, there is a medium-grained diabase dike probably of Keweenawan age.

East of Beardmore to Jackpine, there are only a few outcrops showing banded slaty rocks cut by narrow diabase dikes. Between Jackpine and Nezah the country

Blackwater lake, near Jellicoe. The illustration shows the peneplain character of the country.

is covered with sand or muskeg. A diabase dike outcrops on the siding near Nezah station.

From Nezah to Blackwater lake there are only a few outcrops of a banded, greywacké-like rock, probably Keewatin in age.

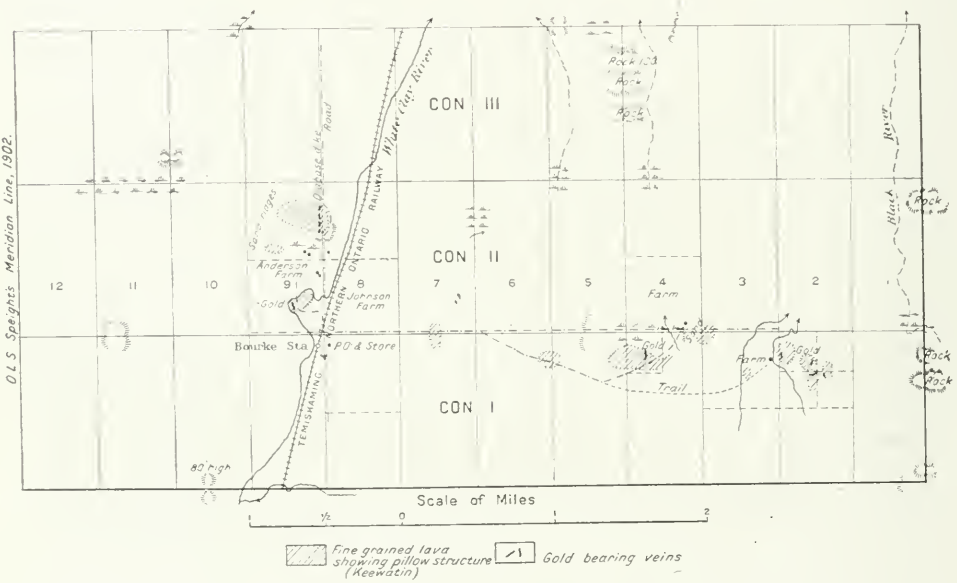
One mile west of Jellicoe there is a long rock cut through an altered pillow lava which contains whitish rounded inclusions like spherules. In this rock there are lenticular veins of quartz carrying low gold values, and a narrow dike of albite porphyry.

Jellicoe, altitude 1,082.50 feet, is located on a flat sand plain which is evidently an old lake deposit formed in Pleistocene times.

GOLD-BEARING VEINS IN BENOIT TOWNSHIP

By A. G. BURROWS

Benoit township is on the line of the Timiskaming and Northern Ontario railway, 50 miles northwest of Cobalt and a few miles northwest of the Kirkland Lake gold area. Some interest in the township resulted from discoveries of gold during 1916. Several quarter sections have been taken up for homesteads in the vicinity of Bourke station. Most of the township is drift-covered, while the northwestern part is largely sandy. There are a few outcrops of rock in the southerly part of the township, which rise as low ridges in the drift.



Plan of south half of Benoit township showing geology and location of gold veins.

Geology

There is little variation in the rock, which for the most part is greenstone of Keewatin age, often fine-grained and with pillow-lava structure. The rock under the microscope proves to have been greatly altered to chlorite, calcite, albite and other secondary minerals. A rock which forms the hanging-wall of the Wickstead quartz vein is a fine-grained greenish-black metabasalt. Some very fine lath-like plagioclase feldspars can be recognized, but these are largely altered to chlorite and other secondary minerals, while the ferromagnesian mineral is also altered to chlorite. Small patches of calcite are abundant as an alteration product. A sample from the pit on the flat veins on the Skognshi claim is very similar, only coarser in grain.

The greenish tinge of the basaltic rock is due to an abundance of the secondary mineral, chlorite.

In an exposure of rock on the Anderson farm, along the creek near the railway track some of the greenstone has an amygdaloidal texture.

Gold Bearing Veins

Anderson Farm

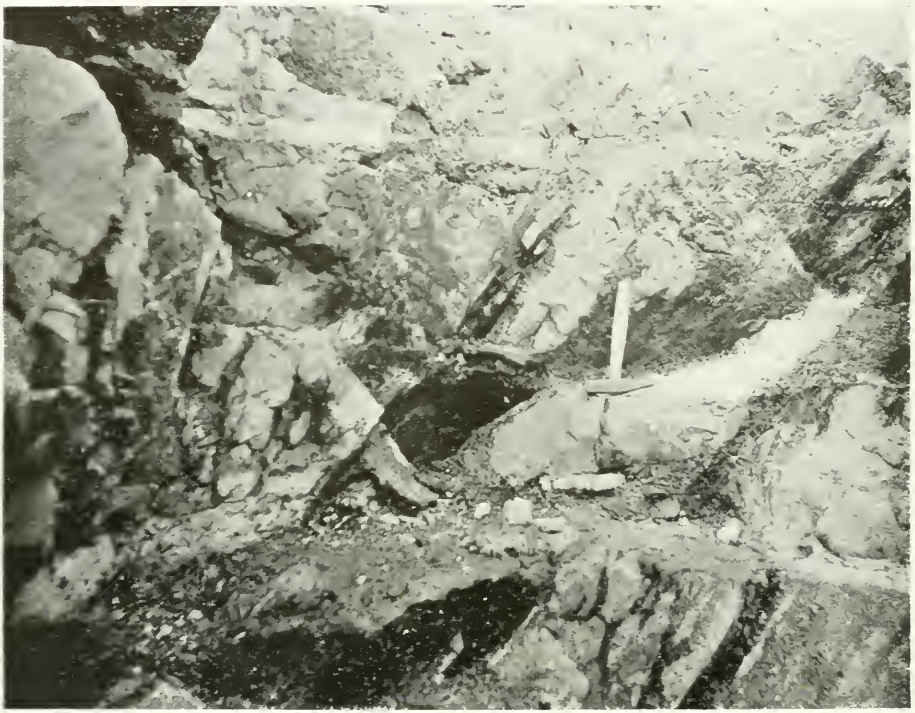
The chief interest centred in a discovery of gold which was made on the Anderson farm by its former owner, Oscar Anderson. This farm is located in the

Quartz vein on Wickstead claim, Benoit township.

second concession of Benoit, on the south half of lot 9. The gold occurs in the rusty-weathering quartz-schist band in the greenstone. This band strikes N.W. and S.E. in a low outcropping in a bend in the White Clay river. Very little work has been done, beyond a small amount of stripping with a shot on the showing. The question of ownership of the farm became involved in litigation, consequently there has been a cessation of work. Where the stripping was done, a hundred feet from the river, there are several showings of native gold in the decomposed quartz-schist outcrop. As far as could be observed from the small

amount of exposure, the deposit has the character of a shear zone in which there are lenses of quartz along its strike: at one point this rusty zone is about three feet wide. Some of the quartz lenses are about a foot in width. The rock accompanying the quartz is greatly impregnated with iron pyrites which, on the surface, is very much oxidized: calcite is also abundant in the rock. Some specimens of oxidized material showing coarse gold also contain a dark gray mineral with metallic lustre, which proved on testing to be a telluride of gold and silver with 26.88 per cent. of gold, the mineral being probably petzite.

Owing to the small amount of work done the economic importance of the deposit is problematical, but the discovery is one which warrants investigation.



Flat-lying parallel quartz veins in greenstone, Skognski claim, Benoit township.

Wickstead Claim

The Wickstead claim is situated in the first concession of Benoit, being the N.W. quarter of the N. half of lot 4. The vein strikes about N. 25° E., and occurs in greenstone which has a pillow-lava structure. It dips at a low angle to the west, varying from about 45° to nearly horizontal, and has been exposed by trenching for about 210 feet. It is a quite distinct vein of white quartz, averaging probably a foot, although in some places it is two feet in width. The quartz is of a milky white colour, and in a few places is stained by the oxidation of iron pyrites. Visible gold is reported to have been found in several places along

the outcrop. At one place the vein has a pegmatitic appearance, there being fragments of a porphyry dike enclosed. Beyond stripping or following the outcrop no prospecting work has been done.

Skognski Claims

This group of claims comprises the N. half of lot ? in the first concession of Benoit. Native gold has been found in a number of quartz veins. Most of the work has been done on the N.W. quarter of the N. half of lot ?, where two pits have been made on a series of flat-lying quartz veins in a fine-grained Keewatin lava; in one pit, about eight feet deep, there are five of these narrow veins exposed, varying in width from about an inch to three inches. The quartz contains considerable iron pyrites, especially along the contact with the greenstone, while in the wall rock for a few inches from the veins there is crystallized iron pyrites. A few assays of $2.00 to $9.00 per ton are reported in sections of quartz and rock.

In the southeast part of the same lot, there is a brecciated porphyry-quartz vein in the basalt that averages about a foot in width and has been traced for 150 feet. Gold and iron pyrites were observed in a few places along the vein.

A wider vein from two to eight feet in width occurs at the northeast part of the S.W. quarter of the N. half of the same lot. This vein also shows remnants of a porphyry dike, although most of the vein material is quartz. No visible gold was observed, but low gold values are reported to have been obtained. No systematic sampling of these veins had been done, consequently their economic importance has not been proved.

GOLD IN GAUTHIER TOWNSHIP

By A. G. BURROWS

The township of Gauthier is included in the geological map (No. 23a.) of the Kirkland Lake and Swastika areas published in 1913 by the Ontario Bureau of Mines. Since a considerable portion of the township was not examined at that time, and as discoveries of gold had been reported on the Elstone-Dunkin claims, it was thought advisable to revisit this area for a few days in September, 1916. It was found, however, that much of the unexamined area is covered with drift, with here and there small outcroppings of rock. There were only a very few prospectors operating in parts of the township in the autumn of 1916. Gold had been discovered some years before (1912) on a group of claims in the northeast part of the township which now composes the holdings of the Mine d'Or Huronia. Some years before this a shaft had been sunk on claim L. 529 by the Victoria Mines Company, and diamond-drilling had been done by another company on a prominent Keewatin outcrop on the south boundary of the township; in neither case apparently with very satisfactory results.

Much of the western part of the township consists of rolling jackpine sand plains and sand ridges, stretching from Larder lake around to Victoria lake. Most of the rock is in the easterly part of the township. A great part has been burned over in recent years, and travelling is fairly easy as compared with that in most of northern Ontario.

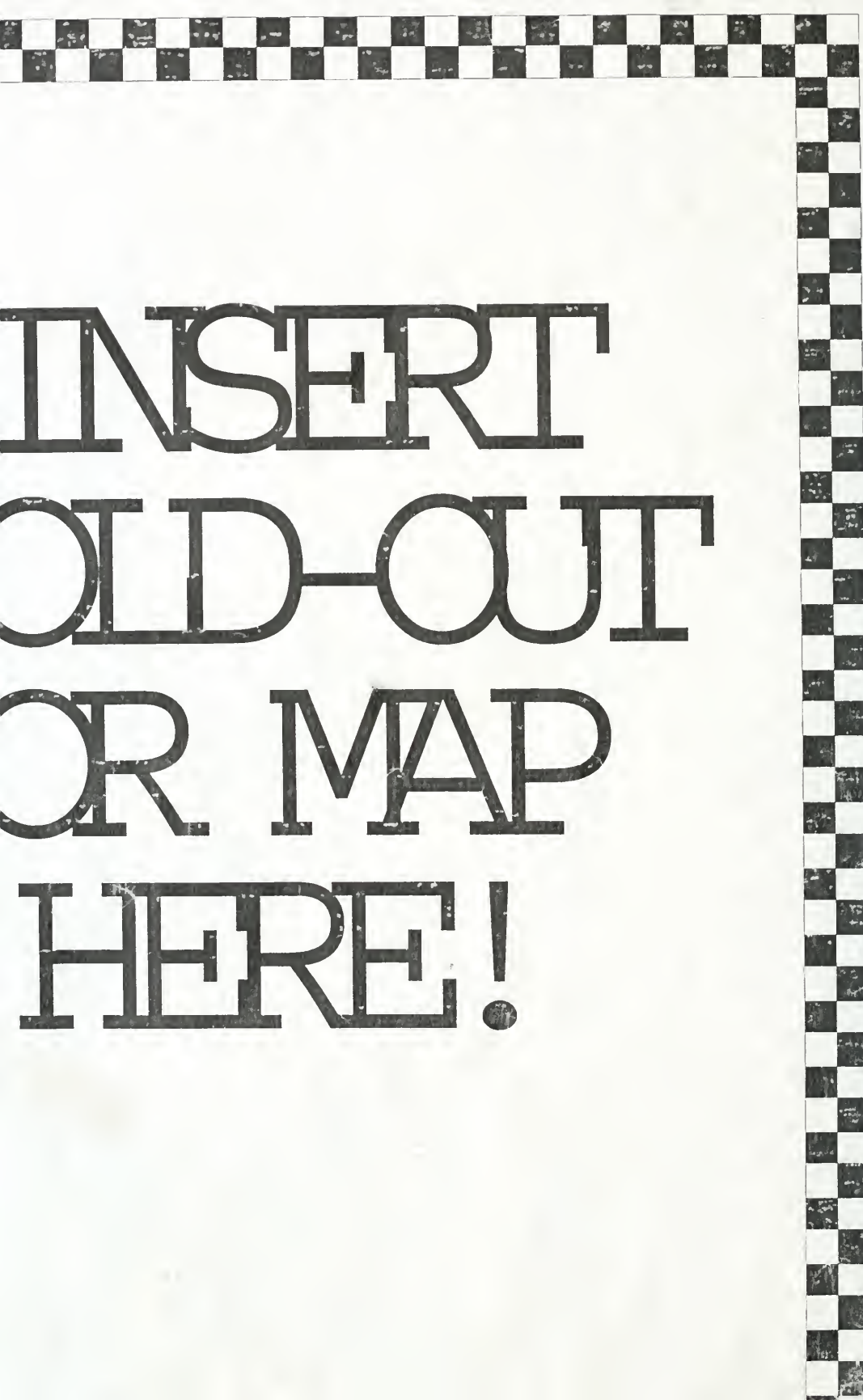
Geology

The rocks outcropping in this township are all referred to the pre-Cambrian. The oldest rocks belong to the Keewatin, and are largely represented by greenstone and greenstone schists. Certain sedimentary rocks (slate, conglomerate) are referred to the Timiskaming series. Both the Keewatin and the Timiskaming are intruded by a number of rocks of lamprophyric and porphyritic type. These intrusive rocks are probably equivalent in age to similar rocks which occur around Kirkland lake, and which are referred to the Algoman.

Keewatin

Masses of greenstone, associated with narrow bands of Iron formation, occur in isolated exposures to the southwest of the Elstone claims, L. 3894 and L. 3893½. These rocks contain some disseminated iron pyrites, and are often rusty-weathering on the surface. Fine-grained basic igneous rocks showing the ellipsoidal structure, are seen on the Elstone claims and enclose a mineralized zone in which native gold occurs. The fine-grained greenstone on claim L. 5732 is probably an alteration from a basalt. It now contains abundant chlorite, calcite and secondary feldspar.

Fine-grained lava, which frequently shows the ellipsoidal structure, forms the main part of the exposure on the west side of the expansion of the Blanche River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immediately west of Beaverhouse lake. A number of narrow quartz veinlets, which are auriferous, have been discovered in this exposure. Frequent outcrops of a similar rock occur northward to the north boundary of Gauthier. Here some of the lava is amygdaloidal, an example of which type can be seen one-half mile west of the northeast corner of the township. Greenstone outcrops frequently to the north of Victoria creek as far as Victoria lake, at the extreme northwest part of the township. Intermingled with the fine-grained lavas, there are coarser-grained rocks of a diabasic character. Such an intermingling of fine and coarse rocks has been observed repeatedly in Keewatin areas in northern Ontario. Many of the Keewatin rocks are extremely schistose, as in the area to the east and southeast of Little Larder lake. Some of the schists are very light-coloured and fine-grained, and have probably resulted from the alteration of felsitic and rhyolitic rocks, while others are dark green, indicating an origin from basic rocks. All these schists are greatly impregnated with calcite and other carbonates. On claim E.D. 391 there is a serpentinous carbonate rock which shows considerable of the bright green chromiferous mica, fuchsite. This variety of rock is frequently observed to the north of Larder lake. It is often intersected by quartz and calcite veinlets, and much prospecting had been done along the band. Similar rocks are of frequent occurrence in Deloro township in the Porcupine area.

Timiskaming Series

The Timiskaming series is shown on the map of the Kirkland lake and Swastika gold areas as extending in a broad band across the townships of Teck and Lebel, and in isolated outcrops in Gauthier township. The sediments are much better preserved in the west part of the area than in Gauthier township, where no contacts were observed with other rocks which are referred to the Keewatin. Several contacts were observed in Teck and Lebel in which there is an unconformity between the Keewatin and Timiskaming, consequently the conglomerate and slates, which are believed to be similar to those in Teck and Lebel, though more greatly altered, are placed in the Timiskaming series. These sediments are largely fine-grained whitish-weathering soft rocks that are greatly impregnated with calcite and other carbonates similar to the Keewatin. A schistose conglomerate occurs on claim L. 349. It contains scattered pebbles of porphyry, quartz and black cherty rocks like Iron formation. Along the Huronia mine road to the north of the Elstone turn, there are several outcrops of altered sediments as far as Little Larder lake. These rocks strike mostly to the north of west, and have a highly inclined dip to the north. The series contains masses of dark schist, which have probably been formed from basic intrusions into the sedimentary series.

While these sediments are here classed as Timiskaming, owing to their similarity to those in Teck and Lebel, it is quite apparent that the metamorphism has been as great or greater than that of the igneous rocks of the Keewatin.

M. E. Wilson in his report on the Larder lake area[1] classifies the slate-like rocks in McVittie township with Keewatin, and in his discussion of their origin states:

> The slates and dolomites may have been laid down contemporaneously with the original volcanic flows . . . although there is a possibility that they entirely or in part overlie the greenstone, and have been infolded.

Owing to the lack of exposure contacts, which even when found are often obscure, there is considerable doubt as to the true relationships between the sedimentary slates and conglomerates, and the volcanic rocks which are classed as Keewatin. Wilson maps the mashed conglomerate on the north side of Larder lake with the Huronian, but states that it may be equivalent to the Timiskaming conglomerate described by Dr. W. G. Miller, Provincial Geologist, at Cross lake in the Cobalt area, since both conglomerates are intruded by lamprophyritic dikes. Mashed conglomerate, similar to that at Larder lake, occurs in a series with fine-grained sediments on claims L. 1393 and L. 1394 in Gauthier township.

Intrusive Rocks

There are a number of intrusives that are younger than the Timiskaming and Keewatin. About three-quarters of a mile north of claim L. 3894 there is a prominent hill which is composed of altered green rock that varies considerably in colour. Some of the reddish rock under the microscope indicates a feldspar porphyritic structure, since remnants of broad plagioclase crystals can be recognized in the fine-grained groundmass. Other rocks are quite dark in colour, and, while very much altered, numerous phenocrysts of ferro-magnesian mineral, probably augite altered to secondary minerals, can be recognized. This rock is very similar to the lamprophyric rock which occurs in large volume to the north of Gull lake in Lebel township. On the hill just westward there are several dikes of feldspar-porphyry, like the one near Kirkland lake. Similar dikes occur in other parts of the township. Usually the dikes are less than 50 feet in width, and some of them are only a few inches. Some of these very narrow dikes occur on the west ridge at the Huronia mine. To the south of the mill at this mine, there is a reddish felsite dike, 14 feet in width, which carries native gold along with veinlets of magnetite and copper pyrites. A thin section of this rock shows a fine-grained quartz-feldspar matrix, with a few small crystals of hornblende and numerous minute veinlets of magnetite.

An acidic dike about 30 feet wide with large phenocrysts of quartz and plagioclase feldspar, intrudes greenstone and Iron formation in an outcrop a quarter of a mile southwest from C. Pinelle's camp.

Granite porphyry occurs on claim L. 814 to the north of the Larder Lake road.

A rock with a syenitic appearance in hand specimens, occurs just north of the buildings at the Huronia mine. It is composed of feldspar and hornblende. The phenocrysts of feldspar are somewhat clouded, but occasionally show multiple twinning.

[1] Memoir 17 E., Geol. Sur. Can., Ottawa.

Gold Deposits

Mine d'Or Huronia

In the year 1912 gold-bearing veins were discovered to the west of Beaverhouse lake along an expansion of the Blanche river. The prospectors who located the claims sold to a company which operated the property under the name "La Mine d'Or Huronia." Considerable prospecting was done on the ridge to the west of the Blanche river, and several narrow gold-bearing veins were located. These veins, usually only a few inches in width, are roughly parallel and strike N. 40° E. Reddish felsitic or porphyritic material usually occurs along the walls of the veins, suggesting a relationship between the quartz veins and porphyritic dikes. The sulphide minerals in the veins are iron and copper pyrites. Masses of copper pyrites, several pounds in weight, are sometimes met with, and these

Workings on west hill, La Mine d'or Huronia, Gauthier township.

frequently carry small fragments of reddish feldspar-porphyry. Grains of magnetite can be observed in some of the vein material; calcite occurs in minor quantity. On the east side of the expansion of the Blanche river and a few hundred feet south of the mill there is a reddish felsitic dike, about 14 feet in width, which has been traced some distance, with a strike of N. 170° W. In this dike there are veinlets of magnetite, which are usually parallel to the walls of the dike. One of these is about four inches wide, and is almost all magnetite accompanied by some copper pyrites and quartz. The dike occurs in basic Keewatin rock. Native gold occurred in several shows on the surface of this dike in minute quartz veinlets. A shaft was sunk to a depth of 102 feet in the porphyry dike.

Most of the work was done on the west side of the expansion. An open cut was made on one of the wider veins on the summit of the ridge, and from this cut some ore was sent to the mill. A shaft was sunk at the open cut to a

depth of 65 feet. A tunnel was also driven from near the shore of the lake, and a shaft was sunk a short distance to the south of the 100-foot level, and a cross-cut run to the north to intersect veins which showed on the surface. Most of the ore treated in the mill came from the west side of the lake, and was trammed across the lake on a floating tramway.

The property has been operated intermittently for several years. A mill was constructed consisting of 15 stamps, a tube mill, Dorr classifier, three concentrating tables, two slime tables and a cone classifier. The concentrates were stacked for future treatment. The mill was run for a short time in the autumn of 1916. A sample of the fresh concentrates assayed $36.40 per ton in gold, and 5.69 per cent. copper. The mill is electrically driven by power supplied from Raven falls, south of Larder lake.

Altered Keewatin basalt and chert with lenticular quartz mass. Elstone-Dunkin claim, Gauthier township.

A very complete examination of the property was made in 1915 by A. Paré for N. A. Timmins who had the property under option, but the option was not exercised.

Elstone-Dunkin Claims

Early in 1916 a discovery of gold was made on three claims which are located in the central part of Gauthier township, where a low ridge of greenstone (pillow lava) outcrops from the sand plain. By means of cross trenches a mineralized band has been traced for about 20 chains on mining claims L. 3894 and L. 38931/2, the greater part of the work having been done at the northwest

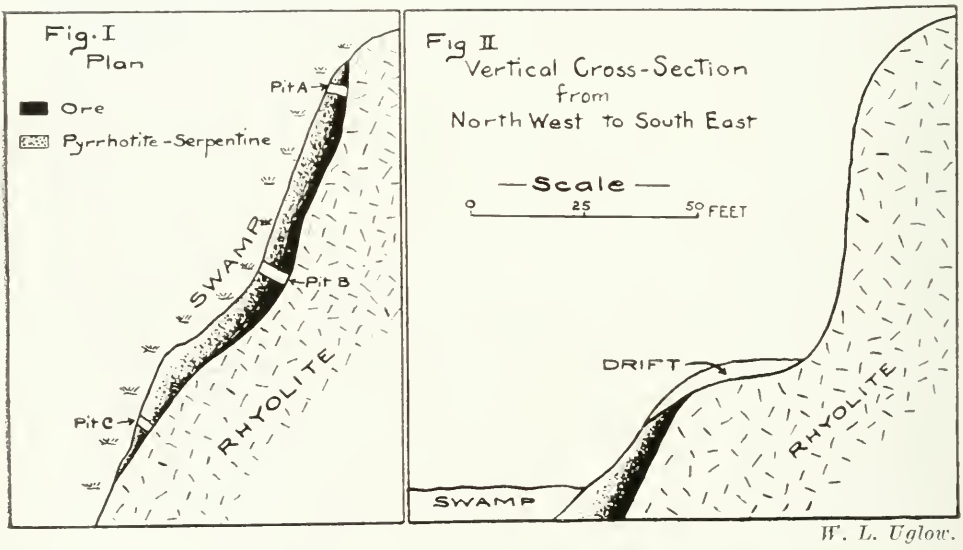
part of the band. In places the mineralized zone which strikes N. 60° W. has a width of over 20 feet, and where stripped is quite rusty-weathered, due to the oxidation of disseminated iron pyrites. Native gold, some in quite coarse grains, was observed at a few points, and an attempt was being made to locate an ore shoot in the mineralized band, which usually shows low gold values on assay. A section exposed in one cross trench shows from the northeast hanging-wall of greenstone six feet of fine-grained greenish altered rock, four and a half feet of reddish porphyry greatly fractured and containing a number of quartz veinlets, one foot of fine silicious material resembling chert with parallel bands of fine-grained iron pyrites, two and a half feet of very rusty-weathered altered rock showing considerable iron pyrites and lenses of white quartz in the direction of the schist, and seven feet of similar rock to the greenstone footwall. Some of the showings of visible gold occur in the 2½-foot section just described. This pyrites band appears to be largely the result of alteration of the greenstone along a line of weakness in which a porphyry dike has been formed, the greenstone having been replaced by a fine-grained greenish silica. A short distance to the north there is a narrow feldspar-porphyry dike, which can be traced across the property. Gold is reported to have been found in veinlets to the north of this porphyry dike.

ALEXO NICKEL MINE, TIMISKAMING DISTRICT

By M. B. BAKER

Introduction

An area that has attracted recent attention as a source of nickel is situated 150 miles due north of Sudbury in the clay belt of new Ontario. At various places in the Porcupine area and farther north in the district of Timiskaming, masses of serpentine have been found, many of which show the presence of pyrrhotite which is frequently nickeliferous. The best of such deposits yet discovered is located on the township line between lot 12, in the third concession of the township of Clergue, and lot 1 in the same concession of the township of Dundonald, and has been given the name of the Alexo mine, from the name of its discoverer, Alex. Kelso.



W. L. Uglow.

Ideal plan and section of Alexo nickel deposit.

The clay belt of northern Ontario, as has been frequently pointed out, is a great level or slightly undulating plain, with few rock outcrops, but these few have proved interesting economically, and indicate a generally rich and important series of rocks, could they be seen. Mr. Kelso was an early settler in this region, and is a close student of technical reports. In reading the report of the surveyor who ran the township base lines of this district, he noted the reference to great magnetic disturbances, rendering the needle useless at this point on the north and south line. Mr. Kelso, therefore, decided to prospect the location, and in 1908 found at the foot of a rocky hill, Fig. 1, much gossan, with greenish-white nickel bloom, morenosite. Assays of the samples collected showed good nickel values.

The rush to the Porcupine gold area, the land-trail to which passed over this deposit, overshadowed the humble prospect. A drilling option was taken by the Canadian Copper Company, and after an apparently unsatisfactory investigation the option was dropped. The owners, however, were not discouraged, and decided to open up the property themselves. E. F. Pullen (now Major, overseas) undertook the management, and in 1912 shipped 1,350 tons of ore to the Mond Nickel Company at Victoria Mines. The property has continued to ship since that time, and by the end of December, 1915, had developed 60,000 tons of ore above the 120-foot level.

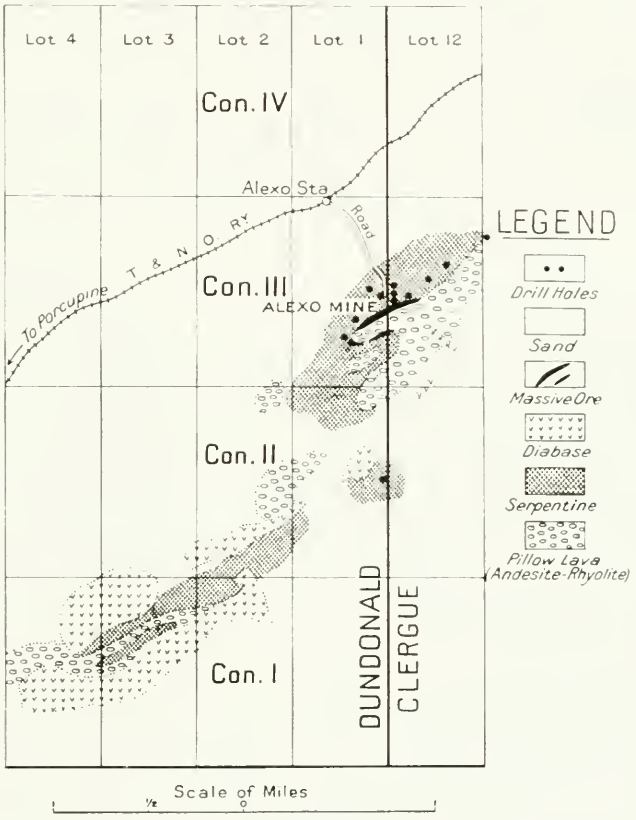


Fig. 3.—Geological map of Alexo nickel mine and vicinity, townships of Dundonald and Clergue, Timiskaming district.

During 1916, the company did no further development work, but continued to ship regularly as much ore as possible. It is the intention, however, to sink further, and develop other levels, as soon as power can be spared for this purpose.

Several short papers have been written on this nickel occurrence by A. P. Coleman and W. L. Uglow[1], but as none of these have been published since

[1] Ont. Bur Mines, Vol. XVIII, 1909, Part I, pp. 23-24, A. P. Coleman. Economic Geology, Vol. V, 1910, pp. 373-376, A. P. Coleman. Ont. Bur. Mines, Vol. XX, 1911, Part II, pp. 34-38, W. L. Uglow. Journal Can. Min. Inst., Vol. XIV, 1911, pp 657-677, W. L. Uglow. Dept. Mines, Can., "The Nickel Industry," 1913, pp. 112, A. P. Coleman.

the property was sufficiently developed, it was thought advisable to have it more carefully examined and described. The writer, therefore, spent part of the past summer on this work. C. W. Knight, of the Ontario Bureau of Mines, spent two weeks on the property in 1915, and kindly placed data collected by him at the writer's disposal.

Geology

The rocks of this area are of four ages, and in descending sequence are as follows:—

PLEISTOCENE.

Till, stratified clays, sand and gravel.

PRE-CAMBRIAN.

KEWEENAWAN ..... Quartz diabase and olivine diabase.

(Intrusive contact)

PRE-ALGOMAN ..... Peridotites now altered to serpentine.

(Intrusive contact)

KEEWATIN ..... Pillow lava, andesite, with abundant ellipsoidal structure.

Keewatin

The oldest rocks in the area form a series of very compact, hard pillow lavas of dense texture, and of greenish-gray colour when freshly broken. There seems little doubt that they are the characteristic Keewatin pillow lavas, so abundant in northern Ontario, and whose age is no longer questioned. Only twenty miles to the southwest of this, A. G. Burrows has found similar rocks overlain by Timiskaming sediments.

There has been some discussion as to whether these Alexo rocks are andesites or rhyolites. They have been called rhyolite by both Uglow[2] and Coleman[3], but the latter in his most recent report[4] has named them andesite. As a matter of fact both andesitic and rhyolitic types are found, one passing into the other, so that the name andesite-rhyolite may be a convenient term to use. C. W. Knight attempted to obtain an average sample of the rock, which, on being submitted for analysis to W. K. McNeill, Provincial Assayer, gave the results, No. I, in the table below. The other analysis, No. II, was made by W. L. Uglow[5]; it is clearly a rhyolitic facies of the rock.

	SiO_2	Al_2O_3	Fe_2O_3	FeO	CaO	MgO	Na_2O	K_2O	Loss on ignition.	Total.
I...	49.13	16.94	8.54	6.80	10.46	1.97	3.32	0.91	2.34	100.41
II...	74.08	11,10	1.42	0.61	0.49	0.25	4.15	7.42	0.25	99.77

[2] Ont. Bur. Mines, Vol. XX, 1911, Part II, p. 34.
[3] Ont. Bur. Mines, Vol. XVIII, 1909, Part I, p. 23.
[4] Dept. of Mines, Can., "The Nickel Industry," 1913, p. 112.
[5] Jour. Can. Min. Inst., Vol. XIV, 1911, p. 665.

There is no doubt that both phases of the pillow lava are intimately mixed, but the bulk of the rock is the more basic, andesite. Microscopic examination of sections taken from the surface, the contact, and from the cores of drill holes, all show the presence of abundant plagioclase feldspar, and subordinate amounts of pyroxene, in a very fine-grained felsitic aggregate. In many places the pyroxene is in appreciably large crystals, like phenocrysts in a finer grained feldspathic groundmass. This characteristic is of much importance, and will be referred to later in discussing the origin of the ore itself.

The pillow lava is so much harder than any other rock of the district that it always stands up as a prominent feature of the landscape, and forms the high hill at the Alexo mine, at the northwestern base of which the ore occurs.

Pre-Algoman

The great Algoman granitic intrusive period appears to have been opened or immediately preceded by a more basic phase of intrusion in most parts of Ontario. In many places these pre-Algoman intrusives are lamprophyric dikes,

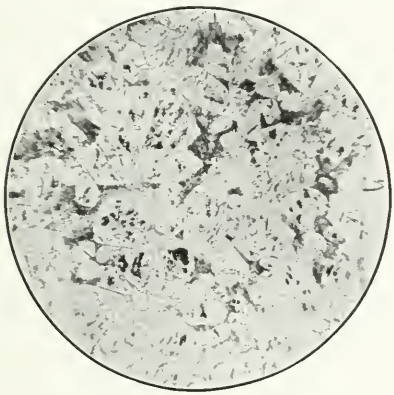


Fig. 4.—Peridotite altered to serpentine. The dark mineral is diallage and secondary serpentine. There is no sulphide present. Magnification ten diameters.

Fig. 5.—Part of fig. 4 enlarged to 30 diameters. Note the black magnetite within the olivine crystals only. Interstitial filling is diallage.

but in many other cases they are substantial boss-like masses of gabbro, pyroxenite, or peridotite. A large percentage of them consist of this last rock, so that many areas of serpentine are now reported from the northern part of Ontario, which are the result of alteration of original peridotite masses.

At the Alexo mine a large mass of peridotite is in contact with the pillow lava on its northwestern flank. The softer peridotite forms the low, flat, more or less swampy ground about the andesite hills. This is an important point for prospectors of this rock. It is almost invariably the lowest ground to be found in the areas in which it occurs. That these masses are post-Keewatin in age, is clear, since in many cases they contain fragments of the andesites as inclusions near their contact. Beyond this, the age cannot be established at the Alexo mine, but a few miles southwest, A. G. Burrows reports similar serpentine masses which are cut by

granite porphyry dikes of Algoma age.[6] The writer confirms this conclusion after visiting the location cited.

The peridotite at Alexo is now highly altered, and consists largely of serpentine, together with smaller amounts of diallage, magnetite, chromite and calcite or dolomite. Veinlets of asbestos, a small fraction of an inch long, intersect the rock in many places. The serpentine has resulted from the decomposition of olivine, and abundant pseudomorphs still preserve the crystal outlines of olivine: *see* microphotographs. In the decomposition of the olivine much magnetite dust has resulted, which is still retained within the pseudomorphs of serpentine after olivine.

From the chemical analysis given below, which is almost that of pure serpentine, it is apparent that originally this rock was composed almost entirely of olivine. It had a little interstitial pyroxene, diallage, and was therefore a wehrlite. In the process of alteration, the olivine has been changed to serpentine, with the customary development of dust-like particles of magnetite scattered throughout the pseudomorphs of the olivine. Calcite and dolomite have also been developed in the process. The diallage is still present as such, and forms an interstitial filling among the crystals of serpentine, Figs. 4 and 5.

The chromium is an original constituent of these peridotites, and is reported from most of the serpentine area already referred to. The following analysis of the rock, which was made by W. L. Uglow,[7] shows it to contain 1.65 per cent. of Cr_2O_3, 9.40 per cent. iron oxides, and 0.59 per cent. of nickel oxide.

SiO_2	Al_2O_3	Cr_2O_3	Fe_2O_3	FeO	NiO	MgO	H_2O CO_2	Total.
35.33	4.04	1.65	6.00	3.40	0.59	37.31	12.30	100.62

Keweenawan

Dikes and intrusive masses of the typical Keweenawan diabase are to be found cutting the andesite at the Alexo mine, and also the serpentine a mile southwest of the Alexo, on the south half of lot 2, concession II, township of Dundonald. The Keweenawan is a very widespread formation in northern Ontario, and is made up for the most part of diabases, traps and gabbro intrusives. These cut the Algoman as well as all earlier rocks. In other parts of northern Ontario a series of sedimentary rocks which overlie the Algoman unconformably, and which are, therefore, of Animikie age, are cut by similar diabase dikes and bosses, so that the Keweenawan age of these latter rocks is fixed. In the vicinity of the Alexo mine, there are no Animikie rocks. It can only be said, therefore, that the diabase is post-Algoman, but the perfect similarity of material and structure seems to justify the correlation of these basic intrusives with the proven Keweenawan of other areas. A microscopic examination of them shows that they are quartz-augite diabases, whether fine or coarse in grain. They all show beautiful ophitic texture, with the lath-like plagioclase feldspar cutting into and through

[6] Ont. Bur. Mines, Vol. XXIV, 1915, Part III, p. 26.
[7] Jour. Can. Min. Inst., Vol. XIV, 1911, p. 663.

the larger honey-coloured crystals of augite. They are remarkably fresh and undecomposed, and are the youngest of the pre-Cambrian rocks in the area. This diabase is characteristically associated with nickel throughout Ontario, and may have played an important part in the formation of the Alexo ore body. This phase of the question is discussed later under the origin of the ore.

The Ore Body

The ore body at the Alexo mine lies at the contact of the pre-Algoman peridotite with the earlier Keewatin pillow lava. It is associated, genetically, with the peridotite or serpentine, and not with the pillow lava. The ore is of two distinct types. The first is disseminated throughout the serpentine rock which preserves its original texture in every respect, Fig. 7; the second consists of solid or massive sulphides which occupy spaces or cracks along the actual contact and even fine veinlets, and fractures in either wall. The contact of the two rocks strikes northeast and southwest, and has a dip of 65 to 80 degrees to the northwest. The deposit has a proven length of about 700 feet, and has been opened up to a depth of 120 feet. Diamond drilling has proved ore at a depth of 240 feet. The width of the ore body, counting both the massive and disseminated ore, is quite variable. On the 120-foot level, e.g., it is 40 feet wide, while at places in the first level it is not over three feet wide, Fig. 6. Development work thus far done shows it to average 8 to 10 feet. This offers a very satisfactory working width for drifting, sinking, or even stoping, as it requires but little timbering.

The massive ore consists for the most part of pyrrhotite and pentlandite, with traces of chalcopyrite and pyrite. The nickel-holding sulphide, pentlandite, occurs in very fine veinlets through the pyrrhotite, but can only rarely be seen with the naked eye. Polished and etched pieces of the ore show the pentlandite very finely scattered through it in filaments. Chalcopyrite is not at all abundant, and occupies small fractures through the ore, as if introduced later than the pyrrhotite, or else leached from the ore body into small fractures which developed in it. Pyrite is more abundant, and often forms quite a proportion of massive ore. Pyrrhotite is much the most abundant sulphide present, and forms a massive deposit resting directly on the andesite foot-wall, in perfectly sharp contact. When broken down in mining, it leaves a sharp and smooth wall. Small veinlets extend into fissures in the andesite, but are just as clearly separable from their walls as is the main vein.

The hanging wall of the massive ore is disseminated ore, wherever the original vein structure has not been disturbed by faulting. The normal structure clearly shows the foot-wall of andesite, often vertical, or even reversed so as to become for the moment a hanging wall, against which, irrespective of its dip, lies massive ore in sharp, clean cut contact. This massive ore varies from a few inches up to 20 feet in width. It is followed by disseminated ore from three to 20 feet wide. The contact between massive and disseminated ore is quite as sharp and clean cut, as is that between massive ore and andesite, and stringers or off-shoots of massive ore penetrate the disseminated ore, all of which shows clearly that the introduction of the massive sulphides was undoubtedly

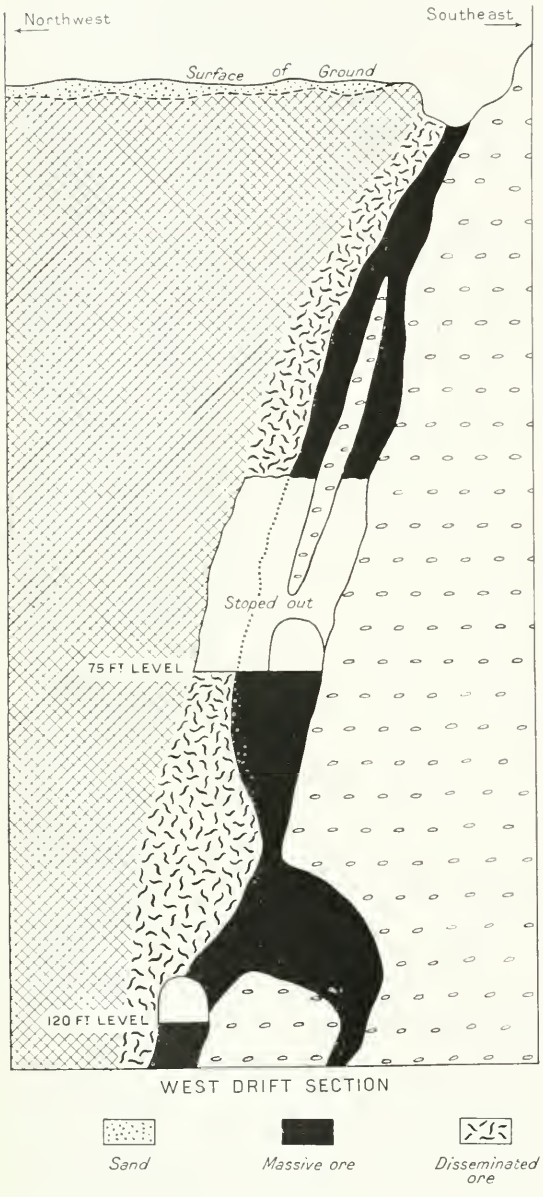


Fig. 6.

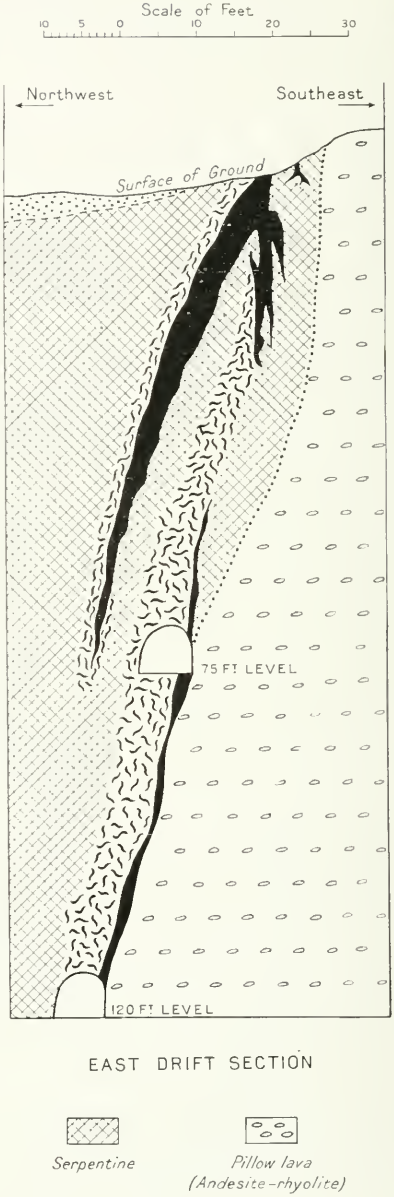


Fig. 7.

Sections across east and west drifts of Alexo nickel mine, townships of Clergue and Dundonald, Timiskaming district.

later than the formation of the disseminated ore. Since Coleman and Uglow examined this deposit, much work has been done underground, permitting a closer examination of the ore body than was possible at that time. They contend that the massive ore, the disseminated ore (so-called "pyrrhotite serpentine") and serpentine blend into one another. This is certainly not the case, for slickensides actually exist between the massive and the disseminated ore. The sections, Figs 2 and 3, show those relationships very well, and are to scale.

The disseminated ore, as the name would suggest, is scattered throughout the rock, forming part of its texture and structure. It grades off into barren serpentine, and is mined as far as it proves economical to do so. Beyond the transitional facies from disseminated ore to serpentine rock, the latter is barren of ore. This is well shown in a cross-cut on the 75-foot level, which runs for 18 feet into the hanging wall. Specimens of this rock examined under the microscope shown no pyrrhotite, Fig. 4.

The massive ore carries 6 to 8 per cent. of nickel; while the disseminated ore carries about 3 per cent. They are mined and shipped together in the ratio of about 40 per cent. of massive to 60 per cent. of disseminated ore. Carloads of this mixed ore run about 4½ per cent. of nickel. It is a valuable ore for the smelter on account of the magnesium content of the serpentine. The Alexo ore contains less than one per cent. of copper.

Origin of the Ore

The origin of the disseminated ore is not clear. Coleman and Uglow in their descriptions of this deposit differ widely in their opinion as to the origin of the ore. Coleman compares the deposit to the nickel-copper ore bodies at Sudbury, and argues that the analogy is so close that one naturally turns to the same theory in explaining its origin, viz., magmatic segregation.[8] It may be pointed out, however, that the origin of the Sudbury ores is still in dispute, many believing that they were deposited from solution. Uglow, on the other hand, says that the Alexo ore was the result of metasomatic replacement of the serpentine by sulphide solutions.[9] A study of the ore body, and microscopic examination of polished ore specimens, and of thin sections, by the writer, cause him to discard both of these theories, and the following evidence is submitted in support of his views.

The original peridotite was composed of olivine, diallage and traces of biotite in a well crystallized aggregate, a photomicrograph of which is shown, Fig. 4. Here the olivine crystals, now converted to serpentine, can still be distinctly seen. Their perfect outlines and texture are preserved in every case. Among the pseudomorphs of serpentine after olivine can be seen a dusty gray substance as an interstitial filling. This filling is diallage and serpentine. There is no pyrrhotite whatever to be seen in this rock, which was taken from the cross-cut on the 75-foot level, and about 18 feet from the contact of the andesite. The black opaque mineral showing is this section in magnetite, and is entirely confined within the olivine crystals. The magnetite may possibly

[8] Dept. of Mines, Can., 1913, "The Nickel Industry," pp. 112, 113.
[9] Ont. Bur. Mines, Vol. XX, 1911, Part II, p. 37.

have been the first mineral to crystallize from the magma, but as none of it shows crystal outlines, the writer believes that it is simply the dusty magnetite that results from the alteration of olivine to serpentine, and is secondary. The olivine is, therefore, the first formed or oldest mineral present in the rock.

Sections were taken from this point to the contact of the massive ore, and form a most interesting and instructive series in discussing the origin of the disseminated ore. The second section, Fig. 5, is a portion of section 1 enlarged to 45 diameters, to show more clearly these relationships. The magnetite (black) is seen to be wholly within the olivine crystals. The brownish black interstitial filling among the olivine crystals is a mixture of diallage and serpentine.

Figure 8 shows the almost barren rock just on the edge of the disseminated ore. Here the solid black pyrrhotite can be seen instead of diallage, and outlining the olivine crystals as perfectly as did the diallage, but not impregnating them at all. The dusty, black magnetite is still seen within the pseudomorphs of olivine.

Fig. 8.—Showing idiomorphic crystals of olivine with magnetite enclosed. Also showing lean ore; the dense black interstitial filling here is sulphides. Magnification ten diameters.

Fig. 9.—Shows sharp, clean-cut olivine crystals imbedded in sulphides, no replacement. Magnification ten diameters.

Figures 9, 10 and 11, show this pyrrhotite groundmass carried more and more to completion, and richer and richer ore resulting, as the margin of the peridotite is approached. It is instructive to note that even in Fig. 11 when the pyrrhotite is most abundant, the olivine crystals themselves are still intact and unreplaced. They contain only the dusty black magnetite as before.

The Replacement Theory

Regarding Uglow's theory of replacement, it may be pointed out that even in the richest of the ore, the original olivine crystals are quite sharp, clear-cut, and unattacked. Their outlines are as distinct as in any peridotite, and it is evident that they formed before the pyrrhotite and were not attacked by it. This is well shown in all the photomicrographs, but particularly well in Fig. 11. It might be claimed for the replacement theory, that the sulphide solu-

tions replaced the diallage, working from the contact inward. This does appear possible, but the writer would point out that the percentage of diallage is not sufficient to account for the richness of the disseminated ore, even if every vestige of it were replaced by pyrrhotite, and this is not the case, for even the best ore shows scattered diallage through its interstices. Still further, there is no evidence of the gradual attack of impregnating solutions, which is always visible in leaner ores, where the replacement is incomplete. This is well shown in Fig. 3, plate I. Replacement by solutions does not satisfy the conditions met.

As a further evidence against the substitution theory, the writer would call attention to the andesite foot-wall of the deposit. Figure 12 shows a photomicrograph of the andesite taken about 100 feet from the contact. The long white crystals of plagioclase are interwoven with pyroxene (dark). The chemical analyses given above also show that the rock is as basic as a diorite in many places. Fig. 13 shows the same andesite broken from the actual contact of the ore body, and the pyroxene can still be seen, unreplaced by sulphides. If

Fig. 10.—Richer ore, but still preserving the same relationship between olivine and sulphides. Magnification ten diameters.

Fig. 11.—Rich ore where olivine crystals are entirely submerged or surrounded by sulphides. Magnification ten diameters.

impregnating solutions had attacked the pyroxene of the peridotite wall, it would also have attacked the same mineral in the other wall. It is perhaps superfluous to point out that the present inclination or dip of the contact plane is no indication of its dip at the time of the deposition of the ores.

Theory of Magmatic Segregation

Turning to the alternate theory of magmatic segregation, as advocated by Coleman for this deposit, the writer would point out that it also does not quite meet the requirements, but does appear more nearly to do so. It has been shown already that the massive ore is clearly of later age than the disseminated, and cannot possibly represent material that, being most basic, crystallized first and settled out along the base of the intrusive body. The writer has just shown

that the olivine crystallized before the pyrrhotite in the disseminated ore, so that a view of magmatic segregation which involves the sinking of the pyrrhotite as the first formed mineral, to the base of the intrusive body, does not satisfy the conditions met with in either the disseminated or the massive ore.

It is pointed out above that the massive ore is in perfectly sharp contact with, and in many places actually penetrates, the disseminated ore. In many cases fragments of disseminated ore are entirely enclosed in massive ore, so that there is no doubt the latter is of later age than the disseminated, and occupies fractures in the serpentine rock, the andesite, or actual contact openings between the two, made by some later local movement. This movement may have been dynamical, or what is more likely, may have been merely due to the shrinkage of volume that the peridotite would suffer in cooling. This would cause the mass to shrink away from the andesite, producing spaces along the actual contact, and also smaller fractures in the disseminated ore and serpentine rock itself. If these changes took place in the closing phases of the peridotite intrusion, it

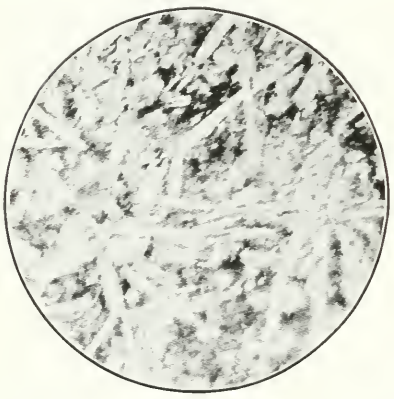


Fig. 12.—Magnification thirty diameters. Andesite about 100 feet from the contact.

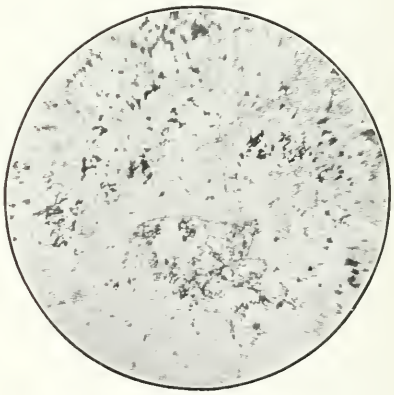


Fig. 13.—Magnification ten diameters. Andesite broken from the contact of the ore body.

would be easily possible for them to re-open channels to depth at which the metallic sulphides were still in thermo-solution, and they would ascend to fill the contacts, as well as smaller fractures in either wall.

It is, of course, possible that the massive ore is very much later in age than the disseminated ore, and may not have been introduced till the diabase intrusions of Keweenawan time, which are abundant in the area under discussion. Testing this theory, the writer found one small vein of mixed sulphides in a body of diabase on the Alexo property, from which he chipped out a sample of the sulphides, free from rock materials, and had it analyzed for nickel, but it did not carry a trace. Since even the apparently barren serpentine rock, away from the ore bodies, carries 0.59 per cent. of nickel oxide, the writer is satisfied that the source of the ore is in the peridotite intrusion itself.

The Probable Origin

That sulphide minerals may crystallize from a magma has been proven experimentally, and there is no doubt that this also occurs in natural rock magmas. The sulphides of economic importance are almost wholly confined to basic rocks, e.g., gabbros, norites, pyroxenites, and peridotites. These are all deep-seated crystallizations in which, as fused solutions, the sulphides are usually the latest minerals to solidify. In the peridotite now under discussion, olivine is almost the only mineral present, and it crystallized first. The sulphides being of greater specific gravity, and still fusible at the crystallizing temperature of the olivine, would sink to the base or margin of the body, but the load of accumulated olivine crystals on the residual "mother liquor," would cause some of the olivine to sink into the sulphides. These latter would soon fill all the interstices and solidify, forming sharp contacts with the already submerged olivine crystals, as is so well shown in the photomicrographs of the ore. The nickel-holding pentlandite was the last mineral of all to solidify, and is thus found in little filaments or veinlets ramifying throughout the pyrrhotite and chalcopyrite. The sulphides, therefore, were an original constituent of the peridotite magma, and took their turn like any other constituent, in the crystallization of the mass. This explains their occurrence at, and about, the margins of the intrusive rocks in every case. Any theory of later introduction has to meet this difficulty, for it is not easy to explain why the invading solutions should always be confined to the actual borders and contacts. The mere mechanics of such a theory are against it.

The writer considers the later massive ore a final invasion by the last residual ore solutions from the deepest portions of the peridotite magma, after its upper and outer portions were already solid, and which by further cooling shrank away from their surrounding walls in certain cases. The writer favours this origin as against the much later Keweenawan injection, because of the lack of nickel in the vein cutting the diabase on this same property; and also because of the difficulty of explaining why nickel injections, of two such widely separated ages, should strike twice in the same place, so to speak, and that place not over 700 feet long and five to eight feet wide.

To summarize then, it seems clear that the disseminated ore was formed by magmatic segregation within the peridotite body proper, and that this segregation was the last material to solidify rather than the first. It settled to the base, or outer margin of the peridotite, by its greater specific gravity, and froze, as it were, a large percentage of the already formed crystals of olivine in its body.

After the whole mass had become solid, it still continued to cool and therefore to shrink, and re-opened a channel along its contact to deeper portions of the mass, where solidification had not yet taken place, thus allowing the sulphides to well up and fill all actual openings and fissures and so form the massive ore. This means that there will be places in the area where disseminated ores occur without any massive ore being present, while there may be places where massive ores are found with no disseminated. The Alexo mine is chiefly valuable because both types occur together, yielding a good shipping product. It is doubtful whether it would pay to mine and ship the disseminated ore alone. A local

smelter might treat such ore at a profit. The ore appears to be eminently suited to concentration by floatation.

Movements Affecting the Ore Body

Since the formation of the ore body there has been local movement which has caused appreciable faulting, in addition to much minor slipping with well developed slickensiding. One fault, striking north and south, crosses the vein about 100 feet west of the main shaft. This fault can be easily seen on the surface on top of the hill just south of No. 2 shaft, where the horizontal displacement can be directly measured as 22 feet. A second fault, or another limb of the same fault, passes more or less longitudinally through the ore body. Its dip is approximately 45°, which is much flatter than that of the contact, so that it crosses the latter. From the direction of gouges and grooves on the fault walls, the movement can be seen to have been such that the peridotite or hanging wall, has moved down and westward.

This faulting is well shown in the two sections, Figs. 6 and 7, accompanying this report. In the upper level of the east drift section, the massive ore is shown resting on a foot wall of disseminated ore and peridotite. In this case the massive ore, from its contact with andesite, has slid down and out over peridotite as shown in the section. In the lower level of the west drift section a large block of andesite can be seen to have slipped down and westward from its former position A line from the displaced ore on the upper level at the east end to the displaced body on the lower level at the west end about indicates the line of actual displacement.

In addition to this larger movement, there have been innumerable small slips throughout the peridotite, so that it is very much broken up, and everywhere shows abundant slickensides, with secondary serpentine, re-crystallized along many of the minute planes. This separation is not of the fibrous asbestos, but dense green serpentine in small but solid veinlets.

Other Serpentine Areas

There are other discovered areas of serpentine in northern Ontario, and no doubt many more undiscovered ones, that are of much economic interest. About one and a half miles southwest of the Alexo mine on the north half of lot 3, in the first concession of the township of Dundonald, serpentine masses are found in contact with andesites, containing appreciable amounts of disseminated nickeliferous pyrrhotite as at the Alexo mine. Minute stringers of massive sulphides are also found. While the associations are identical with those at the Alexo, no work has yet been done to prove their actual commercial value. These areas are shown on the small map which accompanies this report, Fig. 3. They are now under investigation by prospectors and may prove of value for nickel.

During the early spring of 1916 another interesting serpentine area was discovered by Dan O'Connor on lots 6 and 7 in the fifth concession of the township of McCart. A small sketch map, Figure 14, shows the areal relationships. The geological associations are identical with those at the Alexo mine. Ridges of andesite with a northeast and southwest trend form the prominent features of

the area. In the lower surrounding country the rocks are serpentine, which both field and microscopic examination show to be the same as that at Alexo. The original rock was an augite peridotite, composed of olivine for the most part, with augite in lesser amount. The olivine has now gone entirely to felt-like pseudomorphs of serpentine, the outlines of the original olivine can be distinctly seen, and the black iron oxides are again confined to the olivine crystals, as was the case in the serpentine of the Alexo district, and shown in the photomicrographs, figures 4, 5, 8, 11. Further description of this serpentine is not necessary, since it is in every respect like that at the Alexo mine.

The serpentine is in intrusive contact with the andesite, which shows ellipsoidal structure, and a somewhat schistose texture. The strike of the schist is north 30°

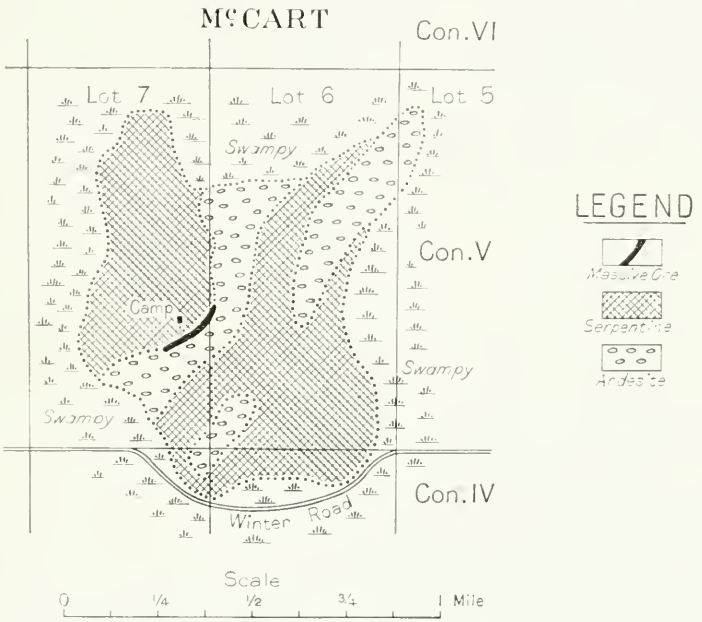


Fig. 14.—Plan showing association of nickeliferous pyrrhotite with serpentine, McCart township.

east, and the dip is to the northwest at about 65°. The microscope shows the andesite to be fine-grained and much re-crystallized. Fibrous to radial actinolite is abundant, and in many places has altered still further to sericite, so that the rock in many places is a sericite schist.

On lot 7 in the fifth concession, as shown in the sketch map, the serpentine and andesite are in sharp contact, and associated with the serpentine close to this contact is disseminated pyrrhotite, containing nickel, and small stringers of massive sulphide are also present which carry as much as 3 per cent. of nickel. It is very significant that the association here is identical with that at the Alexo mine. An explanation of the occurrence has already been suggested by the writer, and need not be repeated here.

Along this contact, on lot 7, is another very interesting rock. It is a black schist or slate-like mass, quite dense, but very platy or slaty in texture. In the field the writer took it for a carbonaceous slate, but on examination under the

microscope it proves to be an ash-rock or tuff, made up of small angular fragments of silicious material, and shows a bedded structure, with much graphitic material along all its fractures, bedding planes, or other lines of weakness. This ash-rock is therefore a fragmental phase of the andesitic volcanic flow, and shows such perfect bedding that the fragments appear to have settled in the presence of water. There is the most perfect bedding and alignment of material, even when viewed microscopically. Similar ash-rocks, associated with ellipsoidal lavas, are reported by Burrows in the Porcupine district.[10]

Pyrite

It is mentioned above that disseminated nickeliferous ore, as well as small veins of massive pyrrhotite carrying nickel, are found close to the contact between the serpentine and andesite. While working about these contracts for nickel-holding ores, Mr. O'Connor discovered an interesting and somewhat unique deposit of iron pyrites. Scattered through the ash-rock or tuff are small round ball-like concretions of iron pyrites. They vary in size from that of peas, to balls two inches in diameter. In places there is a layer six feet or more in thickness, where these ball-like concretions are so packed together, as to be almost touching each other. It is the writer's belief that below water level this pyrites would tend to become massive, and if so, would form a possible source of the sulphide for the extraction of sulphur dioxide, so much needed in the wood pulp industry of northern Ontario.

Chromite

Chrome iron ore is universally, and almost exclusively, found with peridotite rocks. It frequently occurs as large segregations or masses which have separated out of the basic rock magma during the process of solidification. Such masses are quite irregular in shape, and have no definite walls or margins, but grade off into the peridotite rock. At other times chromite occurs in veins, pockets, or contacts, where it appears to have filled fractures, joint planes, or other lines of weakness in the rock. These openings seem to have been filled from a pneumalitic or after period of the intrusion.

No deposits of the former kind were seen by the writer in northern Ontario, but small stringers or veinlets of the latter type were found, none, however, suggesting economic possibilities. The serpentine masses show scattered grains of chromite in many places, and analyses up to 8 per cent. chromium were obtained, but it would require at least double this percentage to make it possible to treat such a rock for its chromite contents. Some evidence of concentration is shown in masses of serpentine which have a blotched or spotted appearance, the blotches being nests of chromite from an inch to three inches in diameter. Such an occurrence is well shown on the line between lots 1 and 2 in the second concession of the township of Dundonald. It would be strange indeed if a country so rich in a rock, that is in turn so rich in chromium, should not yield some economic deposits of this metal, when careful prospecting is done over the whole area. The writer would suggest that the margins of serpentine masses be examined wherever exposed, for concentrations of chrome iron ore, because this oxide would

[10] Ont. Bur. Mines, Vol. XXIV, 1915, Part 3, p. 12.

be one of the first to crystallize out of the magma, and would therefore likely settle to the base and edges of the peridotite mass in which it occurs.

Serpentine has been reported from several other parts of northern Ontario, among which the following may be mentioned: in the Porcupine gold area some fifteen or twenty miles to the southwest of the Alexo district. Several areas of serpentine here have been mapped by Burrows and Hopkins, and are shown on map No. 24 D.[11]

North of Porcupine about twenty-five miles, in the township of Reaume, special interest has been attached to these serpentine areas on account of the discovery of microscopic diamonds in them. Platinum and chromium were also found in the rock, but none of these minerals were present in large enough quantities to have commercial value.[12]

In Coulson and Warden townships a few miles south of Lake Abitibi, areas of serpentine have been mapped by Hopkins and Greenland.[13]

Serpentine was also discovered in 1908 by the writer on the east shore of Lower Lake Abitibi.[14] Analyses showed that the rock contained 6.72 per cent. of chromium.

Asbestos

Another product of great economic value that may be expected in close association with these serpentine masses is asbestos, a fibrous form of serpentine. It has been mentioned above that the peridotite rocks of this area are completely altered, and that the olivine has changed to serpentine. This is not merely a matter of weathering, but a deep-seated alteration or metamorphism brought about by mineralizing solutions, for the most part silicious or calcareous in character. These alterations of the olivine to serpentine are accompanied by an increase in volume of the whole rock mass, which brings about great variations and irregularities of pressure, so that the re-crystallized serpentine shows at least three modes of occurrence. First, there are seams or veins of fibrous asbestos or chrysotile, in which the fibres are packed tightly together, and are oriented at right angles to the walls of the seam or vein. Second, there is so-called massive serpentine where bands or seams of dense, compact, even grained serpentine occurs; and third, the altered rock itself which preserves the texture of the original plutonic rock, but the crystals of olivine are now serpentine pseudomorphs.

Microscopic examination of all three of these shows that they are after all much the same thing. They are all fibrous in texture. Even the so-called massive serpentine is a closely packed, felt-like aggregate of minute fibres in every conceivable orientation. The crystals of olivine in the third type show little nests or spots of the compact, felt-like serpentine just described, but along every little crack or cleavage plane, the minute fibres are packed in crosswise to the line of fracture, and the fibres end abruptly against the wall, so to speak.

The commercial asbestos is of the first type mentioned, and is also found as veins occurring in fractures, cracks, or joints planes cutting the massive serpentine, or the altered peridotite. The fibres stand at right angles to the wall, so that

[11] Ont. Bur. Mines, Vol. XXIV, 1915, Part 3.
[12] Ibid., Vol. XXIII, 1914, Part I, pp. 47, 48.
[13] Ibid., Vol. XXIV, 1915, Part 1, pp. 171-184.
[14] Ibid., Vol. XVIII, 1909, Part 1, pp. 273, 274.

all the asbestos is packed into the veins exactly as were the microscopic fibres in the individual crystals of olivine. The veins vary in width up to two and a half inches, and are abundantly scattered through the rock, with a good deal of parallelism in the main, but with many cross veins, and even horizontal ones in addition.

These veins of asbestos form in places as much as 12 per cent. of the rock mass, so that it is practically impossible that they represent the filling of open fissures. So large a number of spaces up to two and a half inches in width, running in all directions through the mass, could scarcely exist as actual openings. The writer therefore believes that they represent the numerous fractures that would result partly from the original cooling and shrinkage of the rock mass, but mostly from the increase in bulk of the rock while undergoing serpentization. These fractures would not be open ones with walls apart, but merely cracks with walls practically in contact. As the sepentinization proceeded all through the rock, those portions actually along the cracks would behave in the same way as the microscope shows the olivine to have behaved along the cleavage and fractures within the individual crystals of it in the rock. Re-crystallization of the serpentine along the cracks therefore took place, and extended at times an inch or more into each wall from the crack, and the original break is now represented by a medial plane which is found through almost every asbestos vein.

One of the most striking features of these asbestos veins is the uniformity of width which they maintain. That is to say, while all variations in width are found among the several veins, from mere stringers up to two and a half inches, yet one and the same vein preserves a remarkable constancy of width. They are little dike-like bodies, whose walls are parallel, the asbestos ending so abruptly against the wall rock as to suggest no connection whatever with it. The writer believes that the asbestos veins, although distinct and dike-like in their appearance, are merely a phase of the re-crystallization that accompanied the alteration from olivine to fibrous serpentine; and that the solutions which brought about the change seeped along a crack or fracture and attacked both walls simultaneously, and worked out to about the same distance in each wall, thereby producing veins of very even width, and uniformity of texture.

That the serpentine is dense in one place, radial in another, or in felt-like intergrowths, or fibrous in still other places, is probably due to the differential pressures throughout the peridotite mass, due to the expansion in volume which accompanied the change from olivine to serpentine. This expansion can be shown by calculation of the molecular volumes of the olivine and serpentine, to be as high as 50 per cent. or even more in certain cases.

The best deposit seen by the writer is known as the Campsell claim H.R. 968, in the township of Deloro, which is reached by a good road from South Porcupine. Portions of the serpentine on this claim carry as high as 12 per cent. of asbestos veins, and fibre is found up to two and a half inches in length, much of it being two inches. The writer learns that since his visit to this claim it has been opened up and shipments[15] of asbestos have been made.

[15] See page 167, Mines of Ontario.

MOLYBDENITE DEPOSITS OF ONTARIO

By A. L. PARSONS

Introduction

In accordance with instructions from T. W. Gibson, Deputy Minister of Mines, the writer undertook the investigation of the molybdenite deposits of Ontario during the months of May, June and September, 1916. In this work an effort was made to visit every producing locality, and nearly every known prospect in the eastern part of the province was examined. In a few instances where previous descriptions indicated that deposits were of no commercial value, recorded localities were not visited, but in every such case information was received from men who had investigated the deposits which confirmed the previously published descriptions. Although it was known that there are many occurrences of this mineral in the western part of the province, some of which had been seen by the writer a few years ago, it did not seem desirable to extend the work in this direction, as the known deposits that have been described are in nearly all cases too small and too poor in molybdenite to be of economic importance. It was, however, deemed advisable that the deposit on Gull lake, near Dryden, should be examined and E. Thomson was instructed to visit this property. Another property in the Manitou lake region was also visited by Mr. Thomson; and the descriptions of these occurrences are included in this report.

In the investigation, a feature of prime importance was the ascertaining of the common mode of occurrence of the mineral, as a guide to prospecting for further economic deposits. There seemed to be particular need of this, as the common association of molybdenite in eastern Ontario is such that a person reading the ordinary descriptions of the occurrence of this mineral would be likely to look in almost any other place than where it is most likely to occur. Dr. T. L. Walker has given a brief description of this type of occurrence,[1] and has indicated it as being typical. In view, however, of the almost universal generalizations that are ordinarily given, it is desirable to emphasize the statement that nearly every deposit of commercial importance in eastern Ontario is at or near the contact of granitic rock and crystalline limestone.

An attempt was also made to get an estimate of the quantity of molybdenite available in the various mines and prospects. This, however, is an extremely difficult matter in most cases for two reasons: first, because the rich specimens have usually been taken away, so that the stock piles and dumps consist of low grade material; and second, the weathering of the rock and ore exposed in the mine results in the oxidation of the molybdenite to molybdite, which is usually worn away from the exposed surface.

[1] Mines Branch Bull. 93, Molybdenum Ores of Canada, p. 9.

Molybdenum Minerals

In studying the possibility of increasing the production of molybdenum, it is of interest to tabulate the known minerals which contain this metal, and to consider the chemical and physical properties of each, as well as the mineral association. In certain cases this may lead to the discovery of other substances of considerable economic importance. The known natural compounds of molybdenum are the following:

Molybdenite	MoS_2
Molybdite	$Fe_2O_3 3\ MoO_3 7\frac{1}{2}\ H_2O$
Ilsemannite	$MoO_2.4MoO_3$
Wulfenite	$PbMoO_4$
Powellite	$CaMoO_4$
Belonesite	$MgMoO_4$
Achrematite	$3(3\ Pb_3As_2O_8.\ Pb.\ Cl_2)\ 4(Pb_2MoO_5)$
Koechlinite	$Bi_2O_3.MoO_3$
Pateraite	
Eosite	
Molybdosodalite	

Molybdenite is the commonest ore of molybdenum, and at present the only one found in Ontario in economic quantities. It looks much like graphite, and occurs in scales which are sometimes so minute as to require a microscope for their detection, while at other times the scaly masses may be as much as a foot in diameter. Occasionally these scales radiate from a common centre forming nodules, while at times the aggregate may have an earthy texture. In all cases, however, the mineral exhibits a colour which may be used to distinguish it from graphite, the only mineral with which it is likely to be confused. The colour is a bluish lead gray, while graphite is black to brownish black. If, however, the colour does not serve as a distinguishing feature, it is easily tested by making a mark with it upon paper. Usually this mark is shining and of a bluish colour, because the powdered mineral is not finely pulverized. If, however, this mark is rubbed with the finger, the paper and finger pulverize it still finer, and it becomes grayish green. No other mineral which will make a mark on paper will yield this colour. Although so extremely soft, it is decidedly heavy (sp. g. 4.7), and its greater specific gravity might also be used to distinguish it from graphite.

Molybdite is a straw-yellow to canary-yellow mineral, which is frequently found near the surface as a result of the oxidation of molybdenite. It was formerly supposed to be pure molybdic acid, but recent investigations by Schaller show it to be a hydrous ferric molybdate. It is occasionally found in sufficient quantity to be useful as an ore, but at present it is doubtful whether this mineral can be recovered from Ontario ores economically.

Wulfenite is probably the second most important ore of molybdenum. It is usually honey yellow to orange red in colour, is easily scratched with a knife (hardness 3) but not by the finger nail, has a specific gravity of about 7, and occurs in thin tabular crystals. Occasionally the crystals develop a pyramidal habit. It occurs in considerable abundance in Arizona, New Mexico, Nevada and California. It is found principally near the surface along with other oxidized ores of lead.

In view of the large deposits of this mineral, it would be natural to expect to find the sulphides of lead and molybdenum intimately associated. This, so far as the writer has observed, is not the case, but it is of interest to note that lead deposits are found in certain parts of eastern Ontario, not far from molybdenum-producing localities. Whether these deposits belong to the same period of ore deposition as the molybdenite is an unsolved question, but if they do it is possible that a mineral containing both lead and molybdenum would occur at a certain depth.

Koechlinite is a mineral which has recently been described by Schaller.[2] It occurs in small greenish tabular crystals resembling torbernite, and is associated with quartz, native bismuth, smaltite, a red mineral (realgar?), a few needle-like prisms of a gray metallic mineral (bismuthinite?) (stibnite?), and three unidentified minerals. The original material came from Schneeberg, Saxony. In composition it is a molybdate of bismuth (Bi_2O_3. MoO_3.) Two points of interest are to be borne in mind. The association is the Cobalt silver association, and so indicates the possibility of the existence of this mineral in Ontario. The possiblity of a similar mineral containing sulphur instead of oxygen at greater depth is to be considered. The association of molybdenite and bismuthinite is common, and it is desirable to examine such deposits carefully for unknown minerals.

Belonesite is a substance crystallizing in small needle-like crystals in one of the lava flows at Vesuvius. From qualitative tests it was shown to contain magnesia and molybdic acid.

Powellite is a rare mineral found at the Peacock lode in the Seven Devils mining district in Idaho. It consists principally of calcium molybdate, but contains in addition some calcium tungstate.

Achrematite is a massive material found in the mines of Guanaceré, Chihuahua, Mexico. The composition corresponds to a mixture of mimetite, massicot and wulfenite.

Ilsemannite is a blue-black to black crypto-crystalline mineral, which becomes blue on exposure. It is soluble in water, giving a deep blue solution. It is a product of the decomposition of metallic molybdates. It is probably owing to the presence of this mineral, that pyrrhotite and pyrite when associated with molybdenite are tarnished so as to be readily mistaken for bornite and chalcopyrite.

Pateraite is a black massive mineral supposed to be a molybdate of cobalt from Joachimsthal. The material was so intimately mixed with pyrite and bismuthinite that it could not be completely separated and the exact composition is unknown.

Eosite from micro-chemical tests is assumed to be a vanado-molybdate of lead.

Molybdosodalite is a variety of sodalite from Monte Somma which contains over 2 per cent. molybdenum trioxide.

So far as the Ontario deposits are concerned, the only one of the minerals enumerated above that is of importance is molybdenite, though in a few instances the molybdite is sufficiently prominent to suggest the possibility of economic recovery by leaching the ore with ammonia before further concentration.

[2] U. S. Geol. Sur., Bull. 610, pp. 10-34.

A New Molybdenum Mineral

A dark green mineral rich in molybdenum occurring as an incrustation on specimens of ore from Lucania Tunnel near Idado Springs, Colo., has recently been discovered by F. B. Laney of the United States Geological Survey.[3] The mineral itself has not yet been fully examined, but an analysis of the mine water, which is of a deep blue colour and has a specific gravity of 1.031 at 25° C., yields a high molybdenum content. This analysis shows in grams per litre:

Molybdenum trioxide (MoO_3)	7.98	Magnesium	.73
Molybdenum dioxide (MoO_2)	Trace	Sodium	.26
Ferrous Iron	2.01	Potassium	.14
Ferric Iron	1.75	Sulphate (SO_4)	18.26
Aluminium	.27	Calorine (Cl)	.17
Calcium	.50	Hydrogen (of free acid)	.13

In addition to the minerals mentioned above, we have minerals of somewhat doubtful character, mentioned in various publications. Molybdurane is supposed to be a molybdate of uranium, and is said to be found at Joachimsthal, Bohemia. Knightite is said to be a phosphate of molybdenum, found at Catherine's Hill in the State of Maine. Molybdo-ferrite is said to be an anhydrous ferrous molybdate. The writer has been unable to find the original descriptions of these minerals. A source of molybdenum which may be of considerable value in certain regions is scheelite, the tungstate of lime. This mineral frequently contains molybdenum in place of part of the tungsten, and in certain instances the molybdic acid is more than 8 per cent. of the mineral. In connection with this it may be mentioned that in the analysis of powellite, the molybdate of lime, more than 10 per cent. of tungstic acid was found.

Geological and Mineralogical Association

The geological and mineralogical association of molybdenite vary materially in different mining regions, and a rule for prospecting which might be valuable in one region would be useless in another. In general, however, it may be said that it is found in or near granitic rocks, though it is seldom an original constituent of these rocks. The principal types of occurrence are:

(*a*) Pegmatite deposits, in which the molybdenite is associated principally with quartz and feldspar, with smaller quantities of mica and pyroxene.

(*b*) Quartz veins, which often carry, in addition to the molybdenite, ores of bismuth, tin and tungsten, and frequently tourmaline. Pyrite and pyrrhotite are also frequently found in these veins. Sometimes copper ores are also associated with the molybdenite, but in Ontario this is not common.

(*c*) Mineralized crevices in granitic rocks, where the molybdenite has been deposited on the walls, but the crevice has not been filled as in (*b*) with quartz or other vein matter. Such deposits are frequently very showy, but are of little economic value.

(*d*) "Pipes" of silicious material in granite, carrying molybdenite and bismuth, such as the deposits at Kingsgate near Glen Innes, New South Wales, and Wolfram Camp, Queensland.

[3] U. S. Bur. Mines, Bull. 111, p. 15.

(*e*) Biotite granite carrying molybdenite as an original constituent, is described from Mt. Stronach, near Scottsdale, Tasmania.

(*f*) Contact deposits at or near the contact of granite and other rocks. These, so far as our knowledge goes, are by far the most important of the deposits in eastern Ontario, and possibly of western Ontario as well. In general, they lie at the contact of granite or pegmatite with crystalline limestone in a zone of pyroxenite, which has presumably been formed by the metamorphic action of the granitic mass upon the limestone. In these deposits pyrite and pyrrhotite are almost universally present, while the other associated minerals are quartz, calcite, tourmaline, phlogopite, titanite and hornblende.

A variation from the type of contact deposit common in Ontario occurs in Tasmania, where the ore on King Island is said to consist essentially of garnet with quartz, epidote, calcite, monoclinic pyroxene and actinolite. The metallic minerals are scheelite, molybdenite, pyrite and bismuth. This deposit is very close to a contact with granite, and probably represents a more highly metamorphosed type than most of the Ontario deposits.[4]

Prospecting for Molybdenite

So far as the deposits in eastern Ontario may be used as a guide in prospecting for further deposits of an economic character, the most favourable locations are near the borders of granite masses, particularly when these are in contact with crystalline limestone. In case a band of pyroxenite is found between these two rocks, this should be thoroughly examined for molybdenite, as in all the deposits that the writer has examined pyroxene has been associated with molybdenite. As to the conditions in the western part of the province where limestones are almost lacking, it is probable that the molybdenite, when found, will be near the contact of granite and the basic igneous rocks. In the few instances where the writer has seen deposits of molybdenite in the western part of the province, this is the case, but he has not seen a sufficient number to warrant him in stating definitely that it is the rule.

Concentration

Hitherto the concentration of molybdenite has been one of the most difficult problems in ore dressing. This has been due in part to the high molybdenum content demanded by the market, and in part to the character of the mineral. For ores which contain no bismuth or copper the standard of the market is too high for the best interests of the industry, as the demand is for a concentrate that will carry from 90 to 95 per cent. MoS_2. In the case of the ores from eastern Ontario as well as other ores which the writer has seen, it would be more equitable to base quotations on a 70 per cent. concentrate. The impurities in these concentrates are either sulphides or silicates, principally pyrite and pyrrhotite, or pyroxene and mica. In use, the concentrate is either introduced as the sulphide into the furnace, or roasted to convert the molybdenite to molybdic acid. In the first case, pyroxene and mica would be removed in the slag, while the pyrite and pyrrhotite would furnish a source of iron for the manufacture of ferro-molybdenum.

[4] Geological Survey of Tasmania, Mineral Resources, No. 1, Part III, page 10.

In that case the value of the concentrate should be based on the molybdenite content, and the iron values should be added.

In case the molybdenite is to be roasted, these accompanying minerals are of no value, but are also harmless, and are removed with little difficulty in the subsequent leaching of the roasted mass.

As a preliminary to further treatment of the ores, it is customary to pick out by hand large flakes, as the loss in crushing, rolling and screening of this type of material is comparatively large. In all concentrating mills the ore is reduced to a size that will pass a 20-mesh screen. Extremely fine grinding is not to be desired in most cases, as that portion of the rolled material which passes through a 60-mesh screen is found to carry an almost negligible quantity of molybdenite. In consequence, the best results will probably be obtained by crushing and rolling the ore to pass a 20-mesh sieve, and passing this material over a 60-mesh screen to remove dust, thereby lessening the load on the concentrator.

The various concentrating machines will be discussed in the description of the several plants. Detailed descriptions of well known concentrators are not given, except where some new feature has been introduced for the treatment of molybdenite.

Spain Mill

This mill is owned by Mr. W. J. Spain of New York, and is located at the Spain mine in Griffith township, Renfrew county. A general view of the principal buildings is given in figure 1.

The power is furnished by two 60-h.p. boilers which are located in the building to the left. The engine is in the mill building. Before being brought to the mill, the large flakes of molybdenite are picked out by hand, and the rock containing the smaller material is then put through a jaw crusher. From this point it is carried on a picking belt, where flake molybdenite and waste rock are removed, to a set of rolls which reduce it to about ½ inch. It is then conveyed on a second picking belt to a second series of rolls. The fine material is then dried in a steam drier and bolted, after which it is further concentrated by a Hooper pneumatic concentrator. This represents the practice in the early part of the summer. During the summer, however, a modification was introduced in the form of a Wood's machine.

Renfrew Molybdenum Mines, Limited

This company's mill was in course of construction during the summer, and was not finished at the time of the writer's second visit in September. The manager, Mr. Charles Spearman, however, kindly furnished some particulars of the proposed method of concentration. It is the intention to use the Elmore Vacuum concentrator, and as a preliminary to concentration the ore is crushed and put through a ball mill to reduce everything to a fine state. These fines are then mixed with a certain amount of oil and put through the concentrator, whereby the sulphides are removed as heads, while the remainder of the rock material goes off as tails. The writer did not receive details as to the further treatment for separating molybdenite from the other sulphides. This process is said to be very successful in the treatment of Swedish molybdenite ores.

The accompanying view of the molybdenite deposits of this company shows the boilers and compressor in process of installation. The boiler house was completed, and most of the frame-work for the concentrating plan had been erected, at the time of the writer's second visit in September.

Fig. 1—Buildings at the Spain mine.

Fig. 2—View of outcrop at Renfrew Molybdenum mines.

International Molybdenum Company

The preliminary work of this company in the concentration of molybdenum ores was carried on at their plant in Orillia, but as the concentrating machinery was moved during the summer to their new plant at Renfrew, a detailed description of the latter only will be given.

The ore is first put through a gyratory crusher, which reduces it to an inch mesh, and is then elevated to large rolls. The product of the rolls is screened, and the oversize returned to the large rolls, while that portion of the remainder which will not pass a 20-mesh screen is passed through a second set of rolls, the oversize being returned to these. The pulverized ore is then taken to a concentrator which was devised by the manager, G. P. Grant, a description of which follows.

The concentrator consists of a long wooden vat about 12 feet long in which a series of boards or baffles is placed at right angles to the direction of flow of the water. Several types of feed have been tried, two of which have proven more successful than the others. For very fine material, a gentle blast of air blows the ore over the surface of the water and as the current of water carries this material over the baffles the surface tension is altered, so that the more angular pieces sink while the flaky material remains on the surface. The material thus floated is received in a tub provided with a screen which permits the water to escape, while the concentrate is retained. This concentrate is then dried on a steam coil. For coarser material, the distribution on the surface of the water is accomplished by a rotating drum covered with cloth, the material being distributed on the drum by a conical feed. The larger fragments sink before reaching the first baffle plate, so that this material is screened to recover large flakes of molybdenite. The rest of the operation is the same as that described above. From this concentrator it is usual to get a product running from 65 to 80 per cent. MoS_2 without further treatment. In case a higher grade is desired, the product is cleaned by screening the finely rolled material, which removes the more angular fragments of pyrite and quartz that may have come over, while saving the flaky molybdenite. No acids or oils are used in the concentration, the principal pre-requisite to the successful concentration being that the material shall be dry.

Mines Branch, Ottawa

A large portion of the testing plant of the Mines Branch, Mines Department, has been devoted during the past year or more to the concentration of molybdenite. Through the courtesy of the Director, Dr. Eugene Haanel, the writer was permitted to examine the plant. The general plan of procedure is to crush the ore in a jaw crusher, after which it is passed through rolls. At the time of the writer's visit a ball mill was being installed for finer grinding. The finely pulverized material is fed to a modification of the Woods flotation machine, but since the writer's visit the operation has been considerably changed, and wet crushing is now possible. At the time of his visit, the ore was fed to the surface of the water by means of an endless apron, and the gangue sank, while the molybdenite remained floating. With the molybdenite a considerable quantity of pyrite and other minerals continued to float, and this was then taken on another apron and re-deposited on the surface of the water. The portion that still floated was drawn off as concentrate. This was further treated by being dried and re-floated so as to remove the iron sulphides which were the principal impurities in the molybdenite after passing over the concentrator. In the modified machine which was described by G. C. Mackenzie before the Royal Canadian Institute, the endless aprons have

been removed, and the ore is fed directly on to the surface of the water, and the breaking of the surface tension is brought about by jets of water from below the surface.

Uses of Molybdenum

The uses for which molybdenum is employed are more numerous than would at first be thought. Of first importance is its use when alloyed with iron to make molybdenum steel. This is an extremely hard alloy, which retains its hardness to a remarkable degree, even when raised to a dull red heat. It is employed as a high speed steel for lathe work, and is also said to be used for rifle barrels and the cores of large guns.

In the chemical industry, large quantities of molybdic acid and ammonium molybdate are employed in the determination of phosphoric acid. Various molybdenum compounds are employed for dyeing fabrics, colouring leather and rubber, and porcelain painting. Certain compounds are said to be used for fireproofing cloth.

The method of preparation of many of the compounds is secret, and depends upon making them at certain temperatures and with other conditions carefully adjusted. This is shown most strikingly in the preparation of molybdic acid, which may be obtained in a crystallized state by observing proper precautions, while the neglect of these precautions gives rise to the production of a chalky mass of a much lower grade of purity.

Among minor uses for which molybdenum or molybdenum compounds are employed the following may be mentioned:

The metal is employed in the electric resistance furnace in place of platinum because it is not only cheaper but gives quicker heat, and higher temperatures are attainable. For this purpose, however, the molybdenum must be protected from the air, as at high temperatures it is attacked by oxygen.

In the incandescent electric lamps, the supports for the filaments are made of metallic molybdenum.

In certain contact making and breaking devices, molybdenum is used as a substitute for platinum and platin-iridium.

In the Coolidge X-ray tube a considerable proportion of ductile molybdenum is employed.

In dentistry it is stated that molybdenum wire covered with gold is utilized to some extent.

A molybdenum-tungsten thermo couple has been recommended for measuring high temperatures.

It is said that molybdenum is employed in some form for the preservation of cordite in hot climates, but no definite information on this subject appears to have been published. It is also affirmed that molybdenum is used in the synthetic preparation of ammonia under processes covered by German patents. Several alloys of considerable interest and possibly of prime importance of molybdenum with other metals are known. Among these may be mentioned molybdenum-nickel, molybdenum-chrome and molybdenum-stellite, the last mentioned being composed principally of molybdenum, cobalt, chromium and iron.

Fig. 3—Partial view of plant of the International Molybdenum Company at Orillia.

Fig. 4—Electric furnace making ferro-molybdenum, International Molybdenum Co., Orillia.

The artificial compounds of molybdenum are so numerous that it is not desirable to make a list of them at this place, but for an extended description of these the reader is referred to an excellent description of the substances by Moissan.[5]

Ferro-Molybdenum Industry

Two firms in Ontario have undertaken the manufacture of ferro-molybdenum during the past year. The International Molybdenum Company and the Tivani Electric Steel Company. In the early stages of the work both companies encountered serious difficulties, but with more complete knowledge of the physical and chemical conditions necessary for the proper reactions, these difficulties have disappeared, and both companies are now steady producers. Apart from the purely technical difficulties, the industry was seriously hampered by the scarcity of suitable refractory material for the furnaces, and at one time it was difficult to secure suitable electrodes.

The International Molybdenum Company made an experimental run on a laboratory scale at their Orillia plant on May 8th, 1916, and secured a small quantity of beautiful ferro-molybdenum. This product consisted of tabular crystals and a fine granular mass, and while the main mass ran over 70 per cent. Mo. it was stated by G. P. Grant that the tabular crystals contained about 52 per cent. Mo. This latter would probably be equivalent to Fe_2Mo_3 which would contain 53.3 per cent. Mo and 46.7 Fe. In September the company began work on a commercial scale. The furnace is a single arc tapping type, as seen in Fig. 4. The capacity of the original furnace as shown was about one hundred and twenty-five pounds. In the earlier runs pure molybdic acid was mixed with iron, flux and coke. Later runs were made with roasted concentrates, which in some cases still carried sulphur. The resulting ferro-molybdenum in both cases was practically free from sulphur, as this is volatilized in the intense heat of the arc, or is in part taken up by the slag.

The Tivani Electric Steel Company, Limited, of Belleville, have been making ferro-molybdenum since September, 1916. At the time of the writer's visit a charge was being treated in a triple arc Evans-Stansfield furnace which is illustrated in figure 5. As will be noticed, this is a large furnace and is easily manipulated. The charge is introduced through the door at the side, and the slag and molten metal are poured by tilting the furnace and allowing the molten material to flow out of the spout just above the man's head. A smaller two-arc tapping furnace was used for an earlier run and is shown in figure 6. This company has been shipping ferro-molybdenum steadily during the autumn. The charge that was being treated at the time of the writer's visit was composed of molybdenite, with the proper addition of iron and flux. The sulphur in the molybdenite was practically all taken up by the slag, or converted into sulphur dioxide, so that the resulting ferro-molybdenum was practically free from sulphur. As a result of this, the writer has recommended in another part of this report that the grade of molybdenite concentrates should not exceed 70 per cent. when pyrite and pyrrhotite are the only impurities, as these will furnish the necessary iron for the alloy, with a saving in cost of concentration. The first run from this furnace yielded about one hundred pounds of ferro-molybdenum.

[5] H. Moissan, Traits de Chimie Minerale, 1905, T. IV, 685-758.

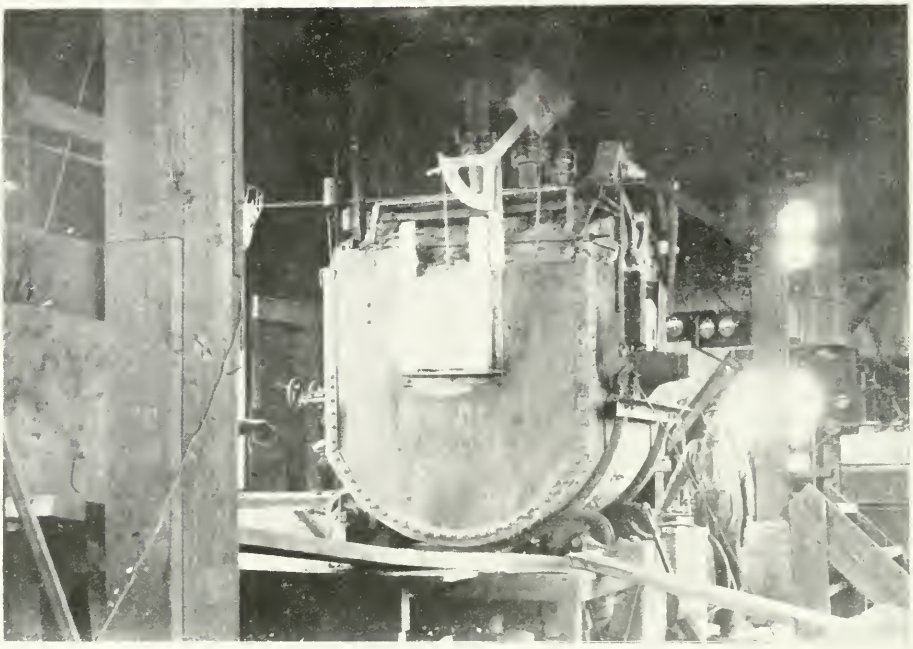


Fig. 5—Electric furnace making ferro-molybdenum, Tivani Electric Steel Co., Belleville.

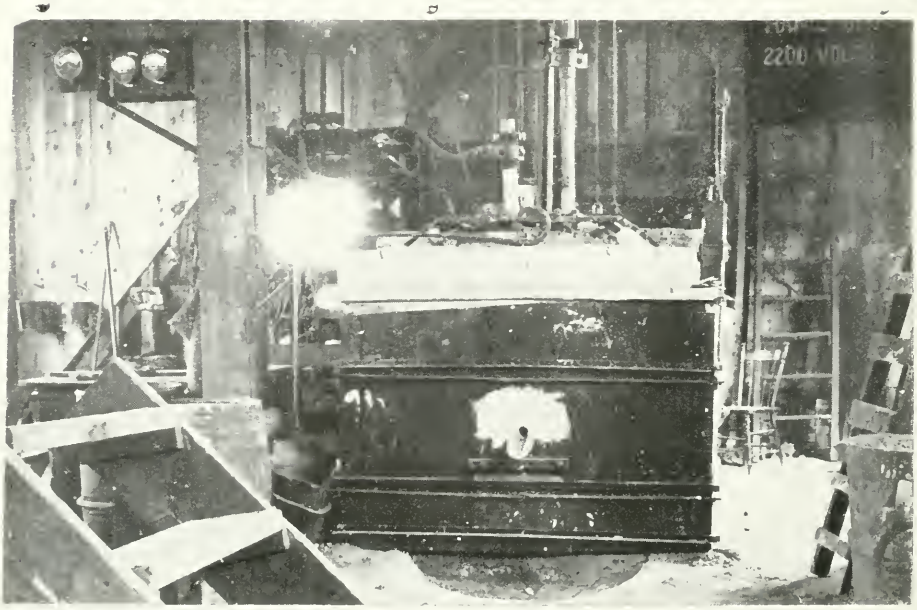


Fig. 6—Electric furnace, Tivani Electric Steel Co., Belleville.

Ontario Mines and Deposits

The molybdenum deposits of Ontario are very numerous, and with the prospecting that has been carried on the list may undoubtedly be greatly extended. The mineral occurs in nearly all parts of the Province where pre-Cambrian rocks are found. In the description the various occurrences have been taken up alphabetically according to the townships in which they are located. The following summary by counties and districts will serve to indicate in a brief manner the general distribution, which is also shown on the sketch maps accompanying the report:

Addington county; Sheffield township.
Algoma district; Molybdenite lake.
Carleton county; March township.
Frontenac county; Miller and Olden townships.
Haliburton county; townships of Cardiff, Harcourt and Monmouth.
Hastings county; townships of Carlow, Dungannon and Monteagle.
Kenora district; Gull lake, Ignace, Lake of the Woods, Lac Seul, Manitou lake, Smooth Rock lake and Wabigoon lake.
Leeds county; North Crosby township.
Muskoka district; Monck township.
District of Nipissing; townships of Airy and Roberts, and near Talon Chute (not molybdenite).
Peterborough county; townships of Anstruther and Belmont.
Parry Sound district; Foley township.
Rainy River district; Rainy lake and Steep Rock lake.
Renfrew county; townships of Bagot, Blithfield, Bromley, Brougham, Griffith, Lyndoch, Matawatchan, Raglan, Roberts, Ross and Sebastopol.
Sudbury district; townships of Denison, Garrow, Graham and Drury (Worthington mine).
Thunder Bay district; Big Duck lake, Conmee township, Terrace Cove (Black River), (Seabeach Bay), Longuelae, and Tamarack lake.
Timiskaming district; Beatty township, Kirkland lake, Net lake, Porcupine and Swastika.

In the description of the deposits of molybdenite every known locality is mentioned. Where it is definitely known that any deposit is not of an economic character, it is so stated. In many cases, however, a deposit which is at present not economic, may with further development become a very desirable property. When the writer has not seen a property, he has given the best opinion available in regard to the deposit with the authority for the opinion.

Anstruther Township

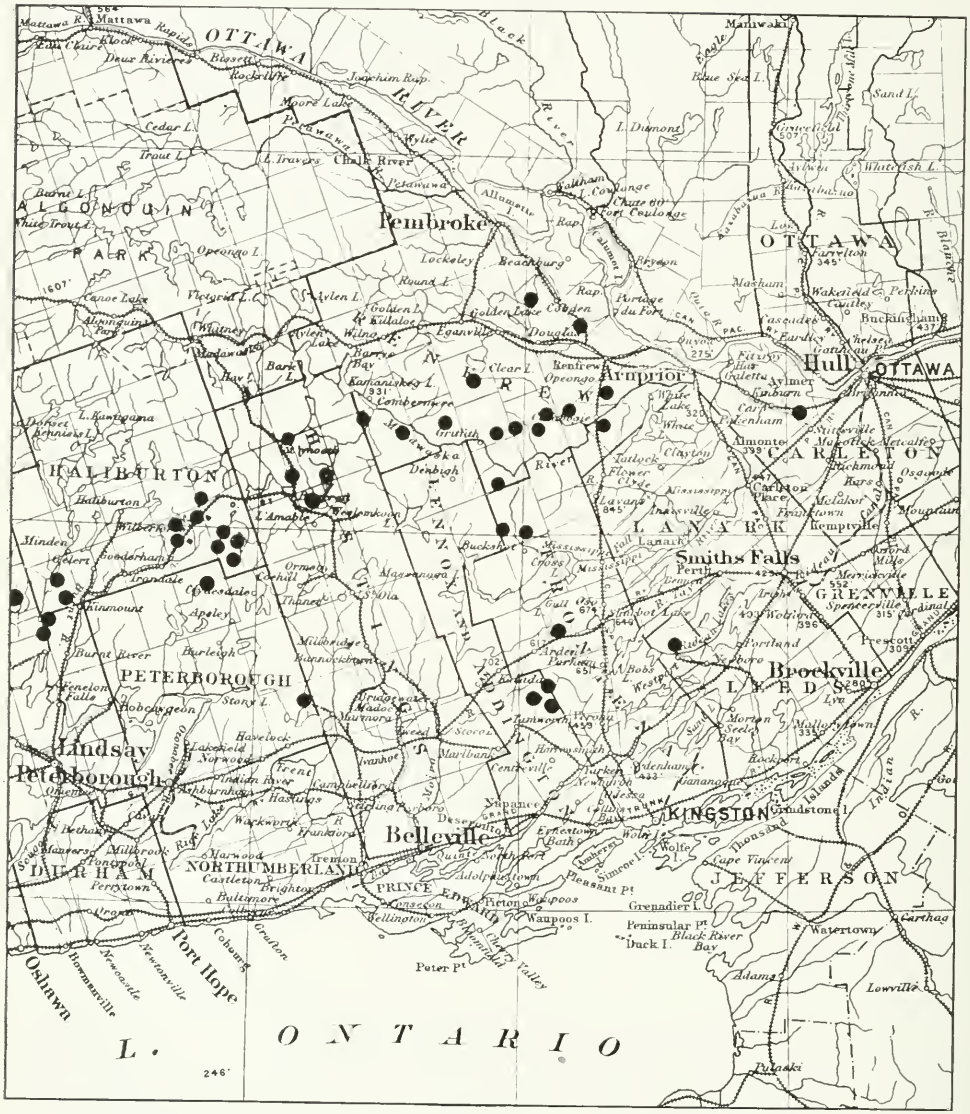
Molybdenite is reported from lot 24 or 25, concession XIV,[6] but so far as the writer has been able to ascertain no development work has ever been done here. The locality is close to the contact between crystalline limestone and gneissoid granite, and should be further prospected.

Airy Township

District of Nipissing. Molybdenite was reported from two locations near the boundary of the Algonquin Provincial Park. One of these was visited by the writer, and it was found that the material was graphite rather than molybdenite. Unfortunately, the gentleman who showed this property did not know the location

[6] Ont. Bur. Mines Vol. XII, p. 56.

of the second reported occurrence, so that the writer was unable to examine it. He was, however, shown samples of molybdenite by G. W. Bartlett, Superintendent of the Park, which had come from some portion of the latter. As to the extent of the deposits, however, nothing was known.



Map of part of eastern Ontario, scale 35 miles to the inch, showing location of molybdenite deposits.

Bagot Township

On the farm of Samuel Hunter, lot 15, concession X, excavations were made several years ago for molybdenite. These pits are now overgrown with shrubbery, but were dry so that they could be examined. The principal pit is about 5 feet

wide and about 15 feet long, and is sunk on a pyroxenite pegmatite dyke in crystalline limestone. The molybdenite-bearing portion is about a foot wide, and carries also some pyrite and tourmaline. The specimens seen, however, were decidedly lean, and the deposit does not appear to be of economic value.

On lot 28, concession XII, on the farm of John Culhane, development work has been done by R. R. Gamey, M.P.P. The principal pit is about 40 by 8 by 4 feet. Mr. Culhane informed the writer that about 200 pounds of flake molybdenite was taken out. There was still to be seen on the dumps possibly a ton of concentrating ore, and a few pounds of flake molybdenite which had been laid aside in tins.

On the farm of William Warren, lot 27, concession IV, considerable development work has been done by Mark J. Paterson and Sir Henry Pellatt. At the time of the writer's visit, however, the pits were filled with water, and the molybdenum-bearing rock was seen only in the stock piles. About four tons of concentrating ore was seen. The writer has since been informed that additional material was stored in barrels.

Lot 25, concession IV. Mr. Morin of Springtown showed samples of molybdenite, which he said came from his farm on the above location. Only one shot had been put in. Conditions were such that Mr. Morin could not take the writer to the place without considerable delay, so that this location was not seen. The samples, however, were of the typical molybdenite-pyrrhotite-pyroxenite association.

Beatty Township

On the Abate claim, lot 4, concession I, P. E. Hopkins reports the presence of molybdenite in a gold quartz vein.[7] The molybdenite is, however, not present in economic quantities.

Belmont Township

"Edward Shannon reported molybdenite from Peterborough county not far from Cordova Mines."[8] No further information is available in regard to this occurrence.

Big Duck Lake

In reporting on the gold deposits of Big Duck lake north of Schreiber, P. E. Hopkins says: "Much pyrite, chalcopyrite, and some pyrrhotite, galena, zinc blende, magnetite and molybdenite (?) are disseminated through the veins."[9] This is the only record that the writer has found of an association of molybdenite and galena, and as its presence was questioned by Mr. Hopkins, it is evident that molybdenite is not present in paying quantities, if at all.

Black River, Lake Superior Region

This is undoubtedly the same as the Terrace Cove locality.

[7] Ont. Bur. Mines, Vol. XXIV, Pt. I, p. 180.
[8] Ont. Bur. Mines., Vol. XII, p. 57.
[9] Ont. Bur. Mines, Vol. XXIV, Pt. I, p. 11.

Blithfield Township

On the farm of Thomas Quilty, east half of lot 29, concession I, of Blithfield, six pits have been opened up along the contact of granite and limestone, resulting in the prospecting of about 400 feet of contact. The property was examined by a company which contemplated entering upon the production of ferro-molybdenum, and the writer's information was obtained from the company's engineer. The width of the mineralized contact zone is said to be about 15 feet, and the chief mineralization seems to be on the side toward the limestone. Among the associated minerals are pyrite and pyrrhotite, and the flakes of molybdenite reach 1 inch in diameter. The mineralization is somewhat irregular.

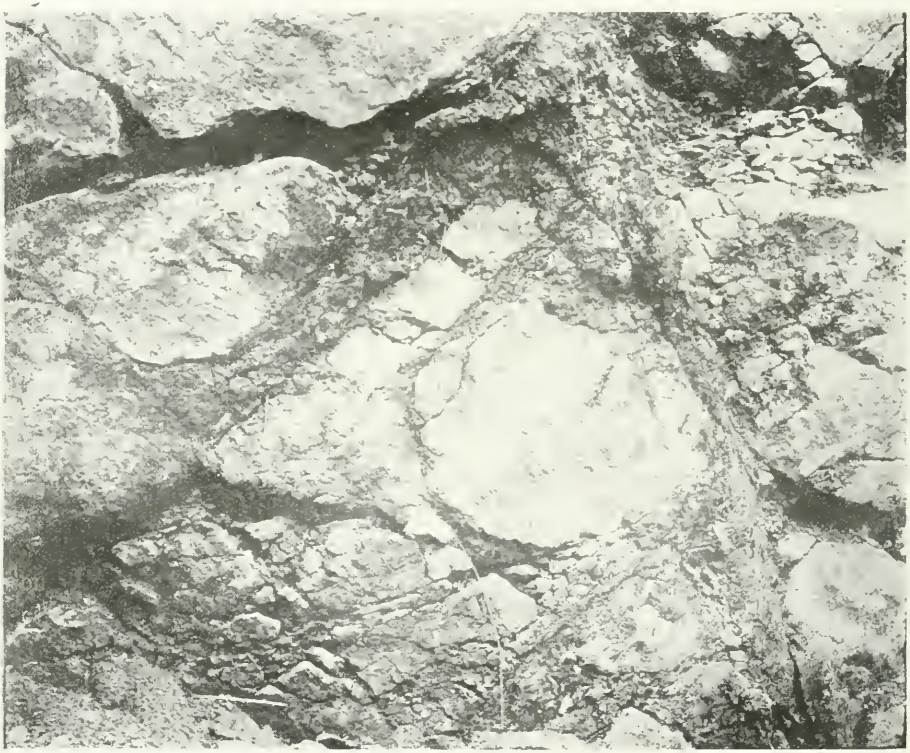


Fig. 7—Pyroxenite carrying molybdenite, Legree mine, Brougham township.

Bromley Township

On the northwest half of lot 24, concession V, Bromley township, a deposit of molybdenite was opened during the early summer by J. E. Cole, lessee. The molybdenite is in a pyroxenite mass, and was seen at intervals for a distance of about 400 feet. Pegmatite is not prominent in the pits, but is associated with the pyroxenite, and comprises about half of the visible rock on one of the dumps. So far as development had gone, the property was low grade, but a consignment of 1½ tons of 1 per cent. ore had been shipped to the Mines Branch for a test.

Brougham Township

On lots 35 and 36, concession XIV, Legree Brothers of Dacre, have opened up a deposit of molybdenite of considerable promise. The ore body consists of a micaceous pyroxenite in gneiss. Two open cuts have been made, one on each side of a roadway. These are about 10 feet wide, and vary in depth from three to ten feet. The total length is about 70 feet. Two stock piles of concentrating ore were kept separate from the rock, and several hundred pounds of nearly pure flake was laid on one side. The writer estimated that there was about 8 tons of 3 per cent. ore in the stock piles, and about 300 pounds of the

Fig. 8—Part of ore body, Renfrew Molybdenum Mines, Brougham township.

flake. This, however, can only be considered an approximation. The property should be further developed, as this material is from the decomposed surface, and molybdite was very prominent both in the concentrating ore and in the flake. The accompanying illustration, figure 7, shows the spheroidal weathering of the ore body.

On lots 7, 8 and 9, concession XI and lot 8, concession XII of Brougham township, the Renfrew Molybdenum Mines, Limited, are engaged in mining molybdenite. The principal work is on lot 8, concession XI, on what is known as the Hunt property, and the Belgian property, the Renfrew Molybdenum Mines,

Limited, being the operating company of the Algunican Development Company. On the occasion of the writer's first visit to the property, preparations were being made to sink a shaft and put up a concentrating plant. A tunnel and cross-cut had been made in the deposit, and some diamond drilling had been done, while considerable ore had been taken from pits along the outcrop of the deposit. The molybdenite occurs associated with pyrite and pyrrhotite in pyroxenite, near the contact of the crystalline limestone and pegmatite, which has developed the peculiar structure known as graphic granite. At the time of the second visit in September a 7 by 11 foot shaft had been sunk 71 feet, and two stations made, so that a better idea of the character of the deposit was obtained. The width of the latter is not so great as appears on the surface, but is still sufficient to make a very good working body. In certain portions of the shaft, the crystalline limestone was found on both sides of the pyroxenite. The ore body has been traced on the surface for a length of about 400 feet, and at one point it is known to reach a depth of 100 feet. The general character of the pyroxenite ore body is shown in the accompanying illustration, figure 8, which shows about half the width of the ore body at this point. The richer portion of the pyroxenite is from 10 to 15 feet wide, and it is estimated that it will run about 1 per cent. MoS_2. There is, however, much of the material that will run considerably higher, but with the more recent methods of concentration it is probably not desirable to cob the better part except in the case of large flakes. The ore is to be concentrated on the spot, and the method is described more fully elsewhere in this report.

A shipment of about 16 tons was concentrated at the testing plant of the Mines Branch at Ottawa in 1915. The calculated percentage of MoS_2 was 0.84.

On lots 16 and 17, concession XI, and lot 17, concession X, Brougham township, the International Molybdenum Company was engaged in the mining of molybdenite during the summer. On the occasion of the writer's first visit in June, the manager, J. C. Murray, informed the writer that over 300 tons of ore had been shipped. This ore ran about 2 per cent. MoS_2, and was shipped to Orillia, as the company had not at that time erected their plant in Renfrew. All of the work up to the first of June had been connected with pegmatitic veins in gneiss, and the ore had been taken out from surface workings. One of the deepest pits is shown in figure 9. Pyroxenite was not observed as a prominent feature round the workings at this time, but in September considerable work had been done in connection with a mass of pyroxenite near by. The principal opening on this pyroxenite was, however, on the west half of lot 16, concession XI, on what is known as the Morin property, which was being worked on option by F. G. Todd of Montreal.

The manager of both properties at this later visit was Dixon Wilder. The pyroxenite was being quarried, and the molybdenite-bearing portion was crushed and sacked for shipment with the equipment shown in figure 10. The ore was hauled to Ashdod station, and shipped to the International Molybdenum Company at Renfrew. The quarry face is about 30 feet broad, and the deposit shows on the surface for about 75 feet, when it apparently dips under the gneiss. A shaft 27 feet deep has been sunk near this outcrop, but is not utilized at present in the mining of the ore.

Fig. 9—Portion of the workings on lots 16 and 17, concession XI, Brougham township.

Fig. 10—Crushing and sacking ore, Morin mine.

On the property worked by the International Molybdenum Company, two shafts were sunk during the summer. One of these was 40 feet deep, and was sunk in the hope of striking the extension of the pyroxenite on the Morin property. The other was 32 feet deep, and was sunk on a pegmatite vein in gneiss. At the bottom, limestone carrying some graphite was found, but not enough of the latter to warrant mining. The presence of graphite may be looked upon as an encouraging sign, as in certain graphite mines molybdenite is found before the graphite is reached.

Molybdenite has also been found on lot 15, concession XI of Brougham township. These deposits are small, and little work has been done.

Cardiff Township

In Cardiff township there are numerous outcrops of molybdenite-bearing rock upon which development has been done. Most of these were visited by the writer, but the information gathered was rather meagre, as none of the properties were working, and water interfered with a satisfactory examination.

The most extensive work was done on lot 11, concession X or IX, on the farm of Alexander Evans. Here a 7 by 9 shaft had been sunk, and there was an open cut about 50 feet long. The rock was principally pyroxenite in gneiss, but very little molybdenite was seen, as the workings were full of water. A small mill containing a crusher and set of rolls was near the shaft, and although no information was available it would appear that the concentration consisted of crushing, rolling, and screening. Dr. Walker reports that the molybdenum-bearing portion of the rock was about one inch wide at the top of the shaft, and 20 inches wide at a depth of about 35 feet. He also states that the molybdenite occurs in large flakes.

On lot 12, concession XI, Messrs. Matthews and McMahon did some prospecting in gneiss carrying pyroxenite and pegmatite, but have discontinued work. Some of the flakes of molybdenite from this property are large, being about 6 inches in diameter, but the high grade material is not abundant. It is, however, desirable that a search be made in the vicinity of the finer grained contact phase of the pyroxenite, in which the molybdenite is likely to be more uniformly disseminated, though in fine scales.

On lot 18, concession IX, on the farm of John Mooney, molybdenite was observed in an outcrop of granite. The richer portion was about 5 feet wide, and possibly 40 feet long. No work had been done, but the molybdenite showed on the surface in scales up to one inch in diameter. It was reported late in the autumn that work had been begun on this property.

On lot 6, concession IX, on the farm of W. R. Kidd, is an open cut about 8 feet wide and 10 feet deep at the deepest portion, by about 40 feet long. The country rock is gneiss, in which there are two parallel granitoid pegmatite veins, each about a foot wide, which carry molybdenite in flakes up to an inch or more in diameter.

On lot 11, concession V, on another farm belonging to Mr. Kidd, is a similar deposit upon which a trench about 50 feet long, from 3 to 8 feet wide and 4 to 8 feet deep, has been excavated. The pegmatitic portion is in two bands, six

inches and two feet wide respectively. The ore is low grade, but easily concentrated, as the flakes are large. Mr. Kidd reported that 100 pounds of flake molybdenite was taken from this trench.

Carlow Township

In the very fine fissures, thin splashes of molybdenite (running high in molybdenum sulphide) are found, but this ore does not occur in any quantity, enough for samples only. It is stated that there is a vein of molybdenite in the neighbourhood.[10]

Conmee Township

The following description of a molybdenite property in Conmee township is given by A. H. A. Robinson[11]:

A mile or so west of Hume station, on the Canadian Northern railway, on the southwest quarter of the south half of lot B, concession III, in Conmee township, a 50-foot shaft has been sunk on an outcropping of molybdenite ore. The molybdenite is found associated with quartz in a vein striking a little north of east and traversing a dike of syenite porphyry which, in turn, cuts the green schists of the district. It is disseminated through the quartz, and sometimes the adjacent wall rock, in fine flakes and films. A little calcite also occurs with it in the vein, while iron, and possibly copper pyrites, is found disseminated in small quantities through both vein and wall rock, though more abundant in the latter.

As the shaft was full of water, and the neighboring country is drift covered, it was not possible to determine the extent of the deposit. Some seven or eight hundred feet or more to the east of the shaft, however, the porphyry dike and the quartz vein, here carrying a few scattered flakes of molybdenite, is again exposed in a small outcrop.

Digby Township

Molybdenite is reported by F. D. Adams on lot 16, concession VII,[12] but the quantity is too small to be of commercial importance.

Dungannon Township

Molybdenite is said to occur on lots 25, concessions XIII and XIV.[13] The writer visited this locality but was unable to find molybdenite, and so far as he could ascertain there had been no recent development work on these properties.

Foley Township

Small quantities of molybdenite, associated with pyrite, chalcopyrite and pyrrhotite, were found on the Big Four property, lots 32 and 33, concession V of Foley, Parry Sound district.[14] From the description the property is not rich in molybdenite.

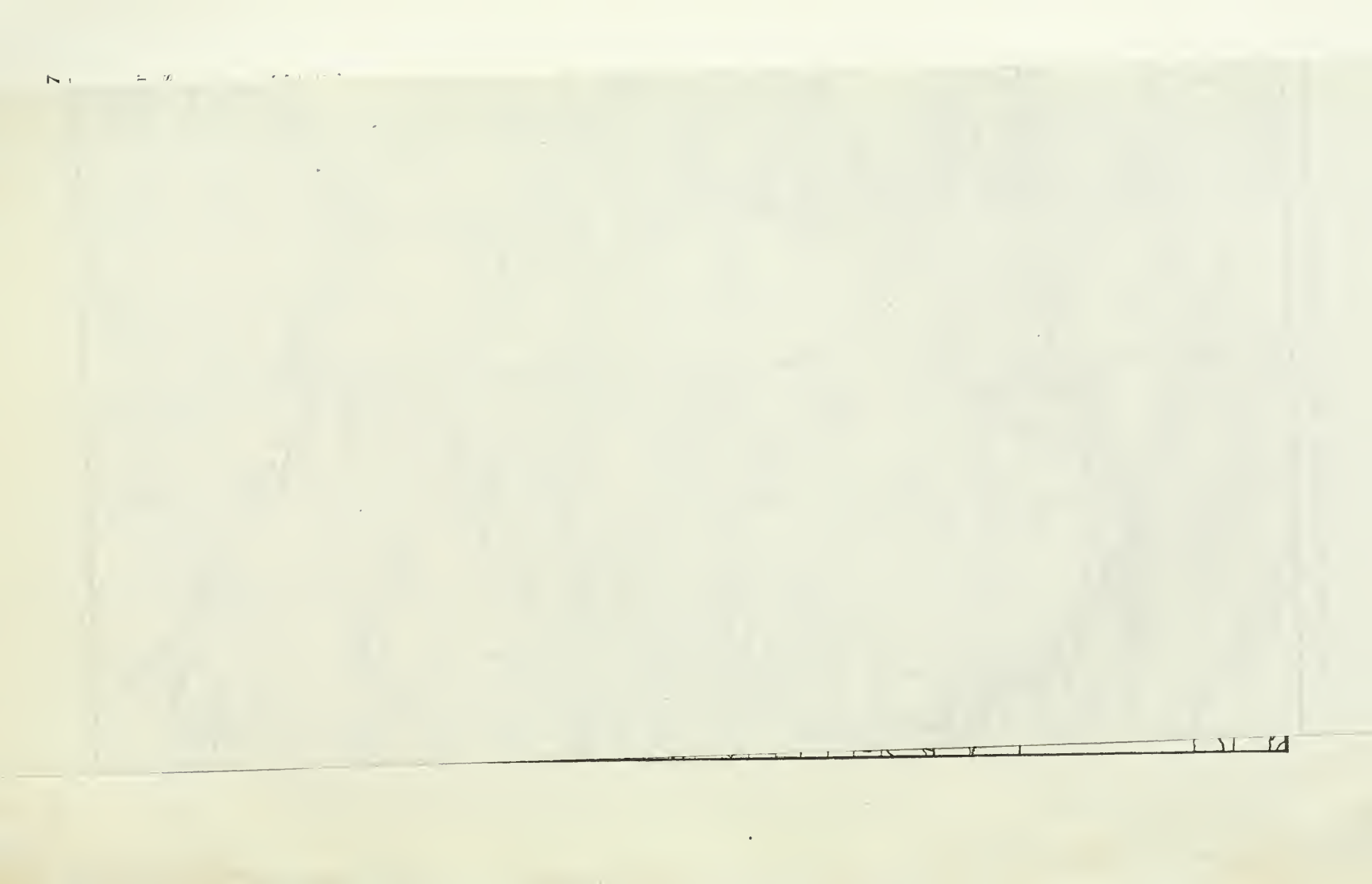
Garrow Township

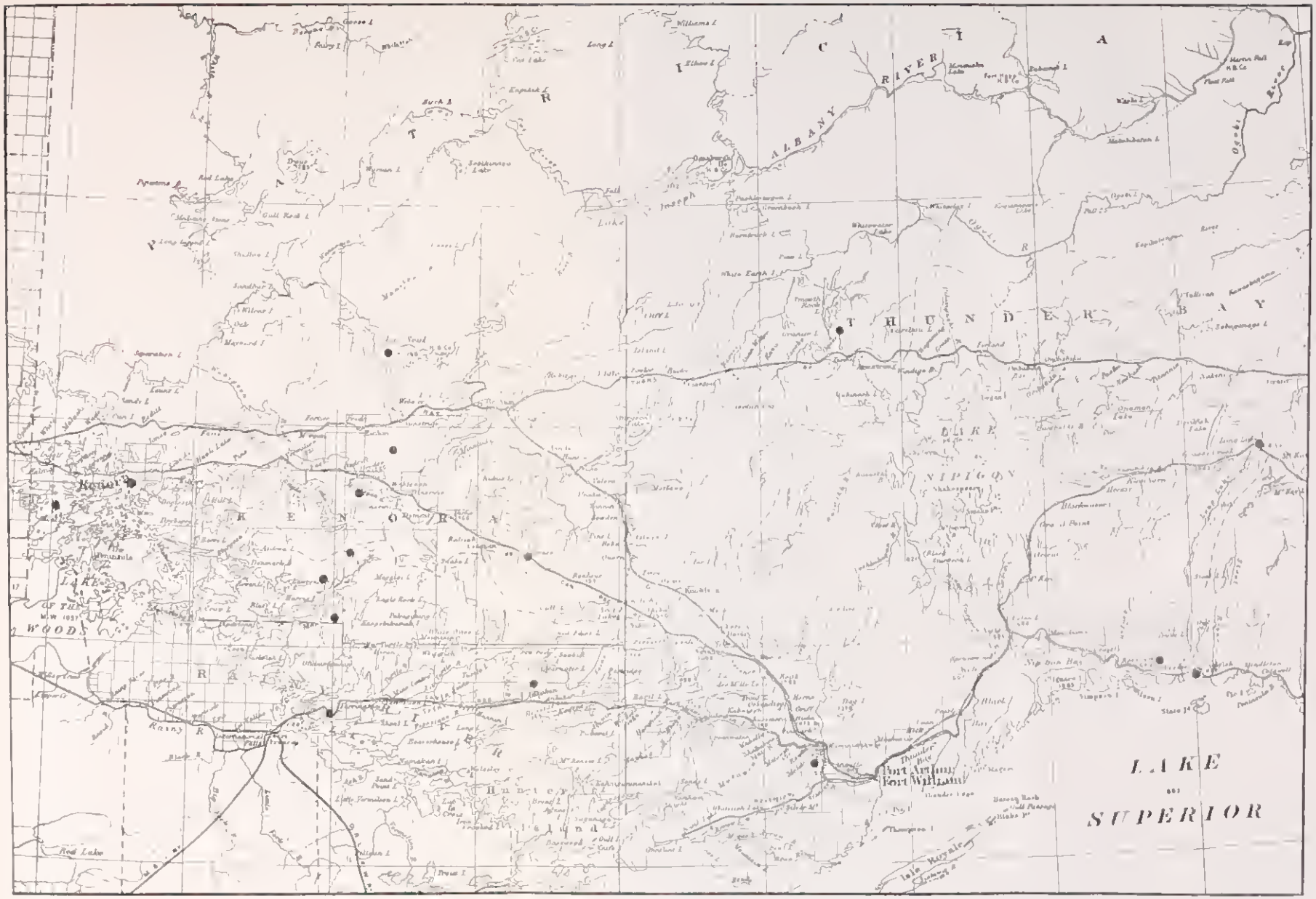
A claim was staked in 1915 by Henry Shepherd on lot 10, concession III of Garrow for molybdenite.[15] This property has not been seen by the writer.

[10] Geo. Sur. Can., Mem. 6, p. 375.
[11] Mines Branch, Sum. Rep., 1915, p. 36.
[12] G. S. C. Ann. Rep., 1892-3, Vol. VI, N.S., p. 7J.
[13] G. S. C. Mem. 6, p. 254, and Mem. 50, p. 116.
[14] Ont. Bur. Mines, Vol. IX, p. 167.
[15] Ont. Bur. Mines, Vol. XXV, Pt. I, p. 43.

Fig. 11—Spain mine.

Fig. 12—Spain mine.





MAP SHOWING OCCURRENCES OF MOLYBDENITE IN NORTHWESTERN ONTARIO. SCALE, 25 MILES TO THE INCH.

Graham Township or Denison Township, Sudbury Region

Dr. R. Bell mentions the occurrence of molybdenite on the Vermilion river on the line between Graham and Denison townships in quartz veins.[16] This is apparently not of an economic character.

Griffith Township

On lots 31 and 32, concession V, and lot 31, concession IV, Griffith township, is the Spain mine, which was opened up some years ago by Joseph Legree of Renfrew, and by him sold to Wm. J. Spain of New York. The workings consist of two open cuts and a 6 by 9-foot shaft which has been sunk to a depth of 50 feet. At the time of the writer's visit, the entire mining work was confined to one of the open cuts, and the working face is shown in figures 11 and 12. The molybdenite is practically confined to pyroxenite and pegmatite, but is more abundant with the pyroxene. At this particular place the molybdenite is in extremely large flakes and masses, some of which are over a foot in diameter. The working face of the open cut is from 12 to 15 feet high and about 10 feet long. The ore, however, occupies only about half of this width, the mineralized portions being separated by a band of gneiss about 12 feet wide. In figure 12 this gneiss is shown as the prominent feature, the men at the left being almost under the contact between the gneiss and the pyroxene rock, while the trench at the right is in a pyroxene pegmatite mass which, although not so rich in molybdenite as that to the left, is still in good concentrating ore. At the time of the first visit, no concentration was being carried on, but flake molybdenite was being cobbed out from the higher grade ore, and several thousand pounds had been extracted in this way. The mill, which is described in another part of the report, was nearing completion, and the lower grade ore was being reserved for treatment. The country rock at the Spain mine is gneiss, which lies in a nearly horizontal position, and is overlain by a crystalline limestone containing much mica as well as some pyroxene. Some two or three hundred feet in a westerly direction from this pit, another small pit is located in a fine grained pyroxenite, in which the molybdenite occurs as minute scales. This, however, was stated by the manager to be of sufficiently high grade to pay for concentrating.

Gull Lake, Near Dryden

The description of the deposit on Gull lake is furnished by E. Thomson.

This property is situated at a point about one mile due south of the extreme eastern end of Gull lake, a large lake about 15 or 16 miles northeast of Dryden. The molybdenite occurs in a pegmatite dyke, which strikes east and west, with a maximum width of about 6 feet and a total length of 50 feet, and consists almost entirely of quartz and orthoclase, but contains as well subordinate quantities of molybdenite, muscovite, and biotite. This pegmatite dike is intruded in a hornblende schist, which also strikes east and west, similarly to the schist found in the immediate vicinity of Dryden. A small test pit has been sunk on this dike to a depth of about 3 feet, all of the specimens of molybdenite obtained from this locality coming from this pit. Various other pegmatite dikes intrude in the

[16] Geol. Sur. Can., Ann. Rep., 1889-91, Vol. V, N.S., p. 25F.

schist at different points along the same outcrop, some following the strike of the schist, others cutting across it, but these carry no more than a few odd flakes of molybdenite of very small dimensions. The property was visited under the guidance of C. Coates of Dryden, one of the first discoverers of it.

Gull River

Alex. Murray reports the occurrence of molybdenite from the Gull river above Mud Turtle lake.[17] This location may be in Lutterworth township, but is not definitely located.

Fig. 13—Open cut, Harcourt township.

Harcourt Township

In the fall of 1901 mining work was carried on by the Land and Immigration Company, Limited, of Haliburton on lots 2 and 3, concession I of Harcourt township under the direction of S. Dillon Mills, who furnished an excellent description of the deposit for the eleventh report of the Bureau of Mines. Since that time little work has been done. The principal development work consists of an open cut about 50 feet long, 6 feet wide and at its deepest place from 15 to 20 feet deep. This opening is shown in figure 13. Continuing along this outcrop, a shaft about 6 by 8 feet was sunk to a depth of 15 feet. Very little molybdenite was seen either on the dump or on the walls of these openings.

[17] Geol. Sur. Can., Rep. Prog., 1852-3, p. 145.

A few hundred feet to the south a small excavation from which about forty tons of rock had been removed showed the only encouraging quantity of molybdenite.

The writer estimated the quantity of high grade material that had been laid to one side to be one or two tons. The material was of exceptionally high grade, and came from a nodular mass in the pyroxenite. This property should be further developed, as with the improvements that have been introduced in the concentration of molybdenite, it would be desirable to have a mill run to ascertain the value of the property. It is almost impossible to take a representative sample, as some of the ore is extremely rich, while the rest is poor, but the writer estimates the rich material on the stock pile to be a 10 per cent. ore.

Ignace

Samples of molybdenite in granitic rock were shown the writer in April, 1917, which were said to have been found near Ignace. The flake is small, but other sulphides were absent.

Kirkland Lake

At the Tough-Oakes mine and other mines in this district, molybdenite is found in some abundance, though usually as a thin film. The veins are said to carry quartz, pyrite, chalcopyrite, galena, sphalerite, calcite, ankerite and dolomite.[18] The presence of galena is unusual, but has also been noted at Big Duck lake, north of Lake Superior.

Lake of the Woods Region

On Quarry island near the Sultana gold mine, veinules carrying molybdenite are reported by Lawson.[19]

The writer was informed some years ago that the ore of the Sultana mine carried some molybdenite. It was also seen by the writer in the vein at the Mikado mine, and on mining location D. 149 in Bag bay of Shoal lake.[20] None of these occurrences, however, are rich enough in molybdenite to be used as a source of this material.

Laxton and Somerville Townships

On the shores of Mud turtle lake in the above townships are several localities where molybdenite has been found. It was first mentioned by Alexander Murray[21] who describes the occurrence as follows:

> The white crystalline limestones north of Balsam lake are intersected by huge veins of white quartz, in one of which small masses of sulphuret of molybdenum were found, on a small island in Big Mud Turtle lake; it occurs disseminated in the vein, accompanied by greenish scapolite, green cleavable pyroxene, sometimes assuming a radiated form, and iron pyrites, which is abundantly disseminated in some parts. Specimens were shown to me by an Indian on the same lake, apparently of the same character as those procured by myself, which he stated had been found a few miles higher up the Gull river.

On the north shore of the lake is a deposit upon which work was done many years ago, and a few flakes of molybdenite were still visible. The lessee, Mr. T. Horscroft, was considering further prospecting.

[18] Ont. Bur. Mines, Vol. XXIII, 1914, Pt. II, p. 21.
[19] Geol. Sur. Can., Ann. Rep., 1885, Vol. I, N.S., p. 144 C C.
[20] Ont. Bur. Mines, Vol. XX, 1911, Pt. I, p. 176.
[21] Geol. Sur. Can., Rep. Prog., 1852-3, p. 144-5.

Fig. 14—Trench, Horseroft mine, Laxton township.

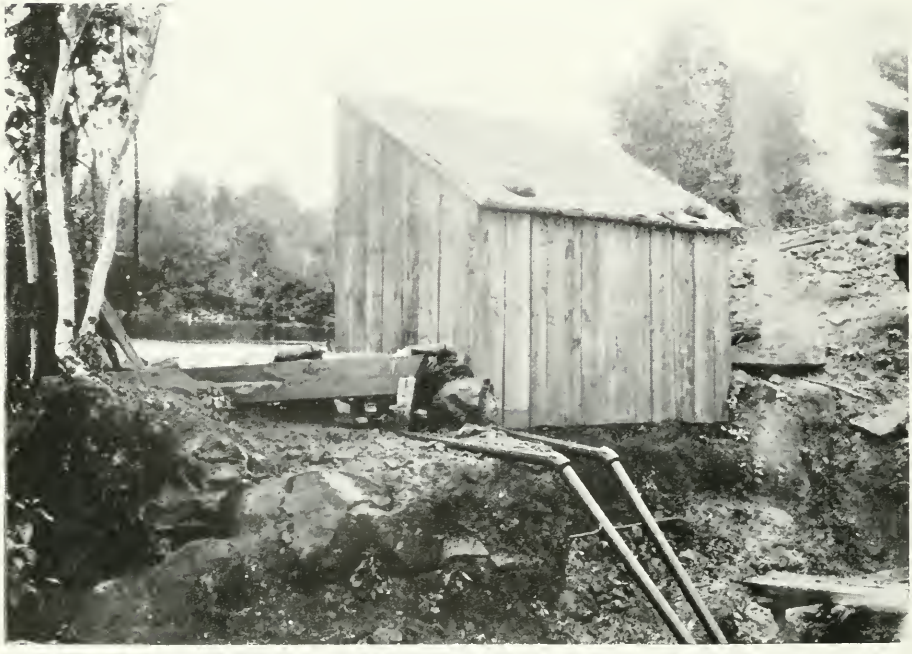


Fig. 15—Pump house, Horseroft mine, Laxton township.

On the west shore of the lake are two mines which from the nature of the case must be discussed together. One is near the water's edge on lot 5, concession XI, Laxton township, and the other is the water lot adjoining.

The mine on the mainland is on the farm of William Adair, and is being worked under lease by T. Horseroft. The property was visited early in May at which time a pit about 12 feet in diameter had been opened up, and a small quantity of molybdenite taken out. The pit was, however, filled with water so that it could not be examined. Mr. Horseroft showed one or two other outcrops of pegmatite which exhibited a few flakes of molybdenite. A second visit in September found the property in better condition for examination, inasmuch as a trench had been extended from the above-mentioned pit for a distance of about 70 feet. The trench was principally in soil and a decomposed pyroxenite, in which considerable molybdenite was present. The pyroxenite was also charac-

Fig. 16—Russell-Ponton mine, Laxton township.

terized by the presence of molybdic ochre or molybdite, which has resulted from the oxidation of molybdenite. The ore body as exposed by this trenching and the pit, is about 75 feet by 20 feet by 10 feet, and would possibly run from 0.3 to 0.6 per cent., MoS_2, but could be easily cobbed to yield a higher grade. Mr. Horseroft reported that he shipped two carloads to the Mines Branch at Ottawa during the summer which carried 2.38 per cent. and 1.08 per cent. MoS_2 respectively.

The trench from which most of this material was taken is shown in figure 14, while the pump-house for de-watering the main pit is shown in figure 15. Two gasoline pumps are used for the pumping.

Adjoining the last mentioned property is the mine which has been sunk by Douglas Ponton and A. J. H. Russell. The general layout of the surface plant is shown in the accompanying view (Fig. 16) which shows the boiler house with the beam of a Cornish pump just at the left of the shaft, while at the right

is a hand derrick; in the foreground is the pit on the Horscroft property as it appeared in May. The shaft, the top of which is shown in the picture, is said to be 50 feet deep and is 7 by 9 feet. Unfortunately, on the occasion of both visits this was full of water, so that the only information concerning the ore body had to be secured by an examination of the stock piles. The ore consists principally of a micaceous pyroxenite, portions of which are of extremely high grade. Several tons of concentrating ore was seen on the stock pile, and considerable high grade material was in the store house. The writer was informed that since his last visit the mine has been pumped out with a view to continuing work.

In addition to the known deposits of molybdenite in this township, the writer observed one or two outcrops on the road between Norland and Coboconk that seemed to furnish the proper association for molybdenite, though unfortunately none of this material was visible. These were contact zones between crystalline limestone and underlying granitic rocks where pyroxene and brown mica were abundant.

Lac Seul

The presence of molybdenite on Lac Seul is reported by Dr. Coleman,[22] who received his information from the manager of the Hudson Bay post.

Longuelac

Samples of molybdenite obtained from a pegmatite near Longuelac were shown at Port Arthur in April, 1917. No information as to the size of the deposit was obtainable. The flakes were large, some being an inch or more across, and the ore appeared to be free from other sulphides.

Lutterworth Township

On lot 7 or 8, concession II, township of Lutterworth, A. Y. Hopkins of Kinmount has opened up a quartz vein containing a little molybdenite. At no place was the vein more than three feet wide, and the molybdenite was not a striking feature of either the material in the vein or of that which had been removed. This vein is in gneiss a short distance from the shore of Davis lake, and is probably not the principal carrier of molybdenite at this locality. A short distance to the west of the vein there is an outcrop of pegmatitic granite, the borders of which are concealed, and in view of the common occurrence of molybdenite on the margins of such masses it is highly probable that prospecting on this margin would result in a further discovery of molybdenite. There is also some molybdenite on a small island a few hundred feet from the shore, but although specks could be seen, the water was over the outcrop and no idea of the importance of the deposit could be obtained.

On lot 7, concession X of the same township, there are two narrow veins carrying molybdenite. The writer did not visit the locality, as no work had been done for years, and the descriptions of the property would indicate that it is not commercially important. This may be the Gull river locality mentioned by Murray.

[22] Ont. Bur. Mines, Vol. V, 1895, p. 61.

Lyndoch Township

On lots 5 and 6, concession VIII of Lyndoch township is the Jamieson mine, which was opened up in 1907 by the late R. A. Jamieson of Renfrew. On the occasion of the writer's visit in June, work had been discontinued and the workings were in the condition shown in the accompanying illustration, figure 17. The workings consist of two pits connected by an open trench and about midway between the pits is an inclined shaft as shown in the figure. As is evident from the illustration, very little of the ore body could be examined, as much of it was covered with water, with which the shaft was also filled. The pit shown is the north pit, and the ore body is about six feet wide, lying between gneiss and crystalline limestone, the latter being also in contact with gneiss on

Fig. 17.—Jamieson mine. The letters signify respectively limestone, ore and gneiss

the other side, though the immediate contact was not seen. The ore body consists of pyroxenite and pegmatite containing large crystalline flakes of molybdenite, together with a considerable quantity of pyrite and pyrrhotite, making an exceptionally good ore for concentration, as the molybdenite flakes are generally more than a half inch in diameter and can be largely recovered by crushing and screening. The ore which had been exposed on the dump had disintegrated considerably, resulting in the breaking down of the pyroxene, and rendering the ore very friable. In this process of disintegration, the molybdenite is oxidized, and some molybdite formed. The pyrrhotite also undergoes a change, taking on a purple tarnish which is probably due to a thin film of ilsemannite, or possibly some unidentified compound of iron and molybdenum. This property was worked on lease during the winter of 1915-16 by the Orillia Molybdenum Mines, Limited. There were

lying near the blacksmith shop 57 sacks of low grade ore ready for shipment, and in addition there were some other small heaps of concentrating ore which had been prepared for shipment. During the period when the last work was carried on about 285 tons of ore, containing approximately 12,760 pounds of pure molybdenite were taken from this mine.[23] The buildings at the mine proper consist of a blacksmith shop and powder house. The mining camp is situated in the valley at the foot of the mountain upon which the mine is located, and comprises a sleeping house, dining camp, office, storehouse and stable, these quarters being well built and very comfortable.

To the southwest of this property, it is reported that the Orillia Molybdenum Mines have staked a claim called Lybdock, but the writer was unaware of this at the time of his visit, and consequently did not examine it.

Manitou Lake Region

The description of the molybdenite vein on claim A.D. 8 is furnished by E. Thomson:

This property is the old mining claim A. D. 8., situated on a small lake west of Upper Manitou lake, about six or seven miles from the former village of Gold Rock, on that lake. The discovery post of the claim, which has been restaked within the last year by E. D. G. Pidgeon, of Wabigoon, is 11 chains from the northeast corner of the claim on a bearing of S. 21° W. The molybdenite occurs in a very quartzose pegmatite dike, striking about northeast, and with a width at both ends of 10 to 12 feet, and a total length of about 250 feet. This dike consists almost entirely of quartz, which in some places is green in colour, but contains as well lesser amounts of chlorite, orthoclase, molybdenite, bismuthinite, and green and bronze-coloured mica. The molybdenite occurs in intimate association with the chlorite, which is in the form of masses in the middle of the dike. These clumps of chlorite, in all probability, are altered horses of the country rock. This dike outcrops over the summit of a hill about 30 feet in height, at the top of which it separates into two stringers about two feet wide. The outcrop of the dike is best seen at both ends, where it shows its full width of 10 to 12 feet on the sides of this hill. The dike is somewhat more pegmatitic at the southwest end than elsewhere. The neighbouring rock is very basic, consisting almost entirely of hornblende, and is apparently a highly altered pyroxenite. This rock changes to a diorite about 100 feet to the east, which again gives way in a few hundred yards further east to a porphyritic quartz diorite. This last rock is apparently part of the Laurentian granite mass which forms the bulk of the rock in the locality. The property was visited in company with the owner, Mr. Pidgeon.

March Township

On lot 6, concession II, March township, a pit was dug about twenty years ago. This location was not visited by the writer, as he was informed by men who had looked it over with a view to opening it up, that it was not of an economic character. It was visited in June, 1910, by Dr. T. L. Walker, whose report is also unfavourable.[24]

[23] Mines Branch Summary Report, 1915, p. 82.
[24] Mines Branch, Bull. 93, p. 44.

Map of part of Ontario showing location of molybdenite occurrences between Lake Superior and the Quebec boundary. Scale, 35 miles to the inch.

Matawatchan Township

On the farm of James Wilson, lot 3, concession VI, is a large mass of pyroxenite in which molybdenite has been found. Mr. Wilson was not at home, but his son guided the writer to the outcrop. A mass about six feet square by about 15 inches thick had been removed and broken up. In this mass were small scales of molybdenite up to one-half inch in diameter. The pyroxenite is on the margin of a large pegmatite mass, and is from 40 to 50 feet wide. Nothing definite can be said concerning values on the showing that has been made, but it is highly desirable that further prospecting be done, possibly nearer the borders of the pyroxenite.

Miller Township

On lot 5, southwest of the Frontenac road, Miller township, some work has been done by G. C. Shannon of Kingston on the farm of Thomas Armstrong. Mr. Shannon is the owner of the deposit. The workings are on a pegmatite dike cutting gneiss and varying in width from six to eight feet. Three pits have been opened up which are connected by a trench through the surface soil. The more westerly pit is about 12 feet square and was filled with water. The middle pit is about 30 feet long and about 10 feet deep at the deepest portion, while the more easterly one has about the same dimensions as the middle one. Molybdenite was seen in the second and third pits, and a small amount of possibly 1 per cent. ore was laid to one side.

On lot 5, northwest range, the property of John R. Kring, T. L. Walker reports that molybdenite occurs in pegmatite. The association is almost identical with that described above, but this property was not visited by the writer.

Molybdenite has been reported by R. A. A. Johnston[25] on lot 3, concession VIII, but no work has been done, as far as the writer was able to ascertain, for several years.

Molybdenite Lake, Near Michipicoten Harbour

Although this is probably the third locality at which molybdenite was found in Canada, practically nothing is known about either the size or character of the deposit. The first mention of it was made by Sir W. E. Logan who in discussing molybdenite localities says: "Specimens from a third locality were sent me from the River Doré."[26]

Dr. J. M. Bell says:

> A deposit of molybdenite is found in a coarse-grained quartzose pegmatite on the shores of Molybdenite lake on the route between Michipicoten harbour and the Frances mine. I was unable to visit the locality during the summer, but I understand that the deposit is not of commercial importance, as proven by some exploration work done on the property some years ago.[27]

Monck Township

On lot 12, concession VIII of Monck Township near Falkenburg station, about three miles north of Bracebridge, molybdenite has been found in gneiss on the farm of Thomas Stead. Two openings have been made in the gneiss, and

[25] Mineral Resources of Canada, Bulletin on Molybdenum and Tungsten, 1904, p. 9.
[26] Geol. Sur. Can., Rep. Prog., 1853-54-55-56, p. 40.
[27] Ont. Bur. Mines, Vol. XIV, 1905, Pt. I, p. 354.

Fig. 18—Ore sacked for shipment, lot 11, concession XV, Monmouth township.

Fig. 19—Molybdenite quarry, lot 13, concession XIII, Monmouth township.

small flakes of molybdenite are to be seen, particularly in the quartzose portions. Except in the material that had been taken out from these openings, no molybdenite was observed, and the quantity that was visible would hardly appear to be of economic value. It is possible, however, that with further development a higher grade body might be disclosed.

Monmouth Township

On lot 11, concession XV, a pit was opened up during the latter part of the past summer by George Padwell in a weathered pyroxenite at the contact of granite and limestone. Figure 18 shows the ore taken from the pit and sacked for shipment. In addition to the ore in the sacks about an equal quantity was in a pile near by to be cobbed and sacked. This ore would probably run from 1½ to 2 per cent. MoS_2. Most of the work done in securing the ore consisted of stripping and taking out loose rock, but drilling had been begun in the less decomposed rock.

On lot 13, concession XIII, Mr. Padwell was engaged during the summer in quarrying the outcrop of pyroxenite shown in figure 19. The quarry face is about 40 to 50 feet long and about 10 feet high, and is entirely in a hard pyroxenite which is in contact with granite. The pyroxenite was traced for about 200 feet. About 15 tons of concentrating ore which would probably run from 1 to 1½ per cent. MoS_2 was set aside in a stock pile.

Mr. Padwell informed the writer that he had shipped a ton of flake molybdenite to the Mines Branch in addition to the material on hand.

A deposit was opened up about a quarter of a mile west of Wilberforce by P. J. Dwyer and associates during the winter of 1916-17, and 25 tons of ore was shipped. The ore as shipped yielded .369 per cent. molybdenite.

Monteagle Township

Molybdenite is reported from lots 26 and 27, concession VI of Monteagle.[28] This locality was examined by the writer without finding any molybdenite. It was also examined by Dr. Walker in 1910 with the same result.

On lot 6, concession I, molybdenite is reported in a quartz vein, but not in economic quantities.[29] This property was not visited by the writer.

At the mine of the National Graphite Company, Limited, near Maynooth, a small quantity of molybdenite has been found. The manager, Ralph Foster, kindly showed the writer over his property, and informed him that in sinking for graphite, molybdenite was usually encountered before the graphite was found, and that the presence of molybdenite is looked upon by the miners at this place as an indication that graphite is near at hand. The molybdenite occurs in a bright, hard pyroxenite, which is rather fine in grain and contains considerable pyrrhotite.

[28] Geol. Sur. Can., Mem. 6, p. 351.
[29] Ibid.

Net Lake

About four miles north of Timagami station on the Timiskaming and Northern Ontario railway and about a quarter of a mile east of the track, a deposit of molybdenite was opened up about ten years ago. The main ore body, upon which a shaft has been sunk, is about fifty feet wide, and consists of a series of gash veins of quartz carrying chalcopyrite and molybdenite in greenstone. The molybdenite is present in radiating nodules which when broken across give the appearance of a rosette.

The shaft is said to be about 50 feet deep, and about 200 tons of rock and ore are upon the dump. The molybdenite is well distributed in the quartz, and although it did not appear to be rich when compared with other ores, the nodular character of the molybdenite renders the appearance somewhat deceptive, and it is probably richer than it appears to be. The writer would estimate that about one-fifth of the dump consisted of quartz which would run 1 per cent MoS_2.

Fig. 20—Head frame and dump, Net lake molybdenite mine.

Openings were seen in two other places on the property where the veins, although of high grade, are not more than a foot wide. At the time when the work was done good camps were erected. Some of these have, however, been burned, but the boiler house is in fairly good shape, and is provided with hoist and pump. A view of the head frame and dump is given in figure 20.

North Crosby Township

On lot 14, concession V, two pits were opened up many years ago, and molybdenite was found associated with granite or syenite, crystalline limestone, and a dark greenish rock largely made up of pyroxene and scapolite. Dr. Walker

visited this locality and reported that it did not appear to be of economic importance.[30]

Olden Township

G. M. Macdonnell of Kingston, worked a deposit on the south half of lot 7, concession VI, Olden township, and shipped 238 lbs. of molybdenite ore in 1916 from Mountain Grove to the Mines Branch, Ottawa, for treatment. The ore is described by C. S. Parsons[31] who says: "The molybdenite was associated with a gangue consisting chiefly of pink feldspar and pyroxene. Very little pyrite and no mica was observed in the sample." The exact location from which this was derived is not mentioned.

Porcupine Region

Wm. C. Offer shipped 140 lbs. of flake molybdenite and 775 lbs. of concentrating ore to the Mines Branch. The exact location of Mr. Offer's property is not known to the writer.

Raglan Township

On lot 27, in concessions IX and X, three pits have been sunk, and molybdenite was seen on two of the dumps. The best showing is at the pit which is on or near the line between the two properties, and is claimed by the owners of the respective lots. From 30 to 40 tons of rock was taken from this pit, and possibly a ton of 2 to 3 per cent. ore lies on the dump. The ore comes in a pegmatite dike in crystalline limestone, about four feet wide. The other two pits are on concession IX, and although the rock on the dump beside one of these showed molybdenite, none was observed on the walls of the pit. Mr. John Windle owns lot 27, concession IX, and Mr. Herman Liedke lot 27, concession X.

Craigmont

The presence of molybdenite at the corundum mines is recorded by W. L. Goodwin[32] and by A. E. Barlow.[33] From a perusal of the reports the deposit does not appear to be of economic importance for molybdenite.

Rainy Lake

Lawson mentions the occurrence of a quartz vein carrying molybdenite at the contact of the Laurentian and Couchiching at Bear's passage on Rainy lake,[34] but says nothing to encourage the hope that it is of economic character.

Roberts Township

John Mataris staked a claim for molybdenite in Roberts township in 1915.[35]

[30] Mines Branch, Bull. 93, p. 45.
[31] Mines Branch Summary Report, 1915, p. 117.
[32] Ont. Bur. Mines, Vol. XV, 1906, Ann. Rep., Pt. I, p. 43.
[33] G. S. C. Mem. 50, p. 88.
[34] Geol. Sur. Can., Ann. Rep., 1887-88, Vol. III, N.S., p. 180F.
[35] Ont. Bur. Mines, Vol. XXV, 1916, Pt. I, p. 44.

Ross Township

On the farm of John Rose, lot 22, concession II of Ross township, near Haley station on the Canadian Pacific railway, an open cut has been made on a coarse grained pegmatite dike in gneiss. The dike is from two to four feet wide, but the portion that showed molybdenite was under water, so that the estimate of value had to be made on the material on the dump, as the extension of the dike beyond the excavation was not observed to carry molybdenite. The opening is about fifty feet long and from two to eight feet wide, with a depth exceeding six feet in places. The writer estimated that there was about one hundred tons of rock on the dump and about two tons of concentrating ore which he estimated at 1 per cent. MoS_2. Dr. Walker took a sample from this dump and obtained 1.61 per cent. MoS_2, so that the concentrating ore would probably run between one and two per cent. The writer was informed that 10 tons assaying 3.64 per cent. MoS_2 was shipped this season from this property.

On the west half of lot 7, concession IX of Ross township, some excavations were made a few years ago. The writer did not visit this property, as no recent work has been done, and the last published report by Dr. Walker indicated that little could be done.

Sebastopol Township

On the farm of Edward Ziebarth, lots 36, 37 and 38, Range C, South, are two small dikes in gneiss and crystalline limestone in which some molybdenite has been found, but the development up to date has not exposed a deposit of commercial importance. The width of the dikes is about two feet and 18 inches respectively, and they consist of pyritic pyroxenite and pegmatite.

Sheffield Township

On lot 5, concession XIV of this township is located the Chisholm mine, which was worked under option during the spring and early summer by the International Molybdenum Company, with J. F. McKenzie as manager. Nine men were employed in mining operations under what appeared to be very favourable conditions, as the deposit is a flat-lying body of crystalline limestone containing large masses of pyrite, pyrrhotite, hornblende, scapolite, phlogopite and molybdenite, which permitted of open quarry work. At a short distance gneiss was seen, so that although the contact of the two formations was not observed, there is no doubt that it is a typical contact deposit. Two pits had been opened up, and a large body drilled preparatory to blasting. The extent of the work is indicated in figure 21 which shows the larger pit that was opened near the boiler house. Old stock piles were also being removed after preliminary cobbing. At first glance these piles appeared to be rich copper ores carrying molybdenite, as the purple colour so characteristic of bornite and the deep brass yellow of chalcopyrite were very prominent. Instead of being an indication of copper, however, this is probably to be looked upon as an indication of molybdenum, as these minerals proved to be pyrrhotite and pyrite respectively. So far as the writer is aware, this iridescent tarnish of pyrrhotite and pyrite has not been mentioned by any other writer. It is an important point to keep in mind in prospecting for molybdenite, for although the film is too thin to make a satisfactory chemical

examination it probably consists of ilsemannite. Over 200 tons of ore was shipped to Orillia and there concentrated in 1916.

On the farm of Timothy Dwyer, lot 8, concession XV, a pit has been opened up about 8 by 10 feet and ten feet deep, in crystalline limestone. A few flakes of molybdenite were seen which were associated with pyrite, quartz and tourmaline. Pyroxene was not prominent at this pit, though it was present in small quantities. This property was not being worked at the time.

Another deposit was opened up on the farm of Matthew Spratt, lot 8, concession XV, by L. L. Cailloux, but work had been discontinued. An open cut about 10 feet wide by 20 feet long and more than 10 feet deep had been excavated. The bottom of this trench was filled with water, and it was not possible to make a thorough examination. Very little molybdenite was to be seen on the walls of the

Fig. 21—Chisholm mine, pit near boiler house.

cut, but a small stock pile nearby contained a ton or two of low grade ore. The minerals associated with the molybdenite were pyrite, quartz, tourmaline, pyroxene, calcite and dolomite.

On lot 15, concession XVI, on the farm of William Wager, the presence of molybdenite is reported, but the deposit was not seen by the writer.

Five open cuts have been excavated on the farm of A. Kellar, lot 12, concession XIII by O'Brien's-Greenfield of Superior, Wisconsin. At the time of the writer's visit five men were working, and about 160 pounds of pure flake molybdenite had been taken out. The deposits are pegmatite dikes in gneiss, and the molybdenite is principally confined to quartz stringers in the pegmatite. Orthoclase, pyrite, calcite and quartz are the associated minerals of prominence. The work done so far may be looked upon as prospecting, so that the quantity of flake molybdenite saved may be considered encouraging.

Smooth Rock Lake (Manitou Region)

The writer has described the occurrence of molybdenite from two localities on this lake, one in a gold quartz vein, the other as a constituent of trap rock.[36] Neither of the occurrences is of economic importance.

Somerville Township

(*See* Laxton and Somerville.)

Steep Rock Lake

The presence of molybdenite is reported from the vicinity of Steep Rock lake by H. H. Wood, who has a claim on a small lake just over a portage 12 chains long from Steep Rock lake. This small lake is located approximately at N. 48° 49′, W. 91° 35′. From Mr. Wood's description the deposit is a quartz vein in chlorite schist at or near the contact with granite. There has not yet been sufficient development to enable a judgment to be formed as to the value of the property.

Swastika

Molybdenite is reported from the Lucky Cross mine.[37]

Talon Chute

The occurrence of molybdenite has been reported from near Talon Chute, about 25 miles east of North Bay. Dr. Walker, however, visited this locality, and found graphite but not molybdenite.[38] So far as the writer has been able to learn, none of those reporting this occurrence state that they saw one in place.

Tamarack Lake

In July, 1917, while examining the area northwest of Lake Nipigon for the Ontario Bureau of Mines, P. E. Hopkins found a large rusty pegmatite dike containing a little disseminated molybdenite. The location of this occurrence is at the extreme north end of Tamarack lake, or about three miles southeast of Smooth Rock lake, district of Thunder Bay.

Terrace Cove

This locality, although not visited by the writer, is worthy of special mention, as it is the first place at which molybdenite was found in Canada,[39] specimens of which were sent by the Geological Survey of Canada to the Exhibition of the Industry of All Nations in London[40] in 1851. A description of the deposits is given by Sir W. E. Logan[41] as follows:

> The adjoining location to the west is described as consisting of red feldspathic gneiss, traversed by large dikes of black trap, and intersected by two sets of veins. One of these appears to occupy the joints of the rock, slipping at a high angle to the northward. These veins are from one to three or four inches in breadth; and they carry in a gangue of quartz,

[36] Ont. Bur. Mines, Vol. XX, 1911, Pt. I, p. 188.
[37] Ont. Bur. Mines, Vol. XXIII, 1914, Pt. II, p. 20.
[38] Mines Branch, Bull. 93, p. 48.
[39] Geol. Surv. Can., Rep. Prog., 1853-4-5-6, p. 40.
[40] Geol. Surv. Can., Rep. Prog., 1851-52, pp. 37 & 41.
[41] Geol. Can., 1863, p. 705.

considerable quantities of yellow and vitreous copper ores, with molybdenite. One vein is, however, described as having a breadth of eight inches, and as having been traced N. 15° E. for a mile and a half, bearing a considerable amount of yellow copper ore, with molybdenite. The other veins are described as running from the shore to a considerable distance inland, and as in many cases remarkable for a breadth of from ten to thirty feet; others attain but a few inches. The gangue of this series of veins is quartz, containing copper pyrites, with occasionally a little galena and blende.

The size of these molybdenite veins is not great enough to warrant exploitation, unless they are of exceptional richness. This, however, does not appear to be the case in view of Logan's statement that of the molybdenite localities mentioned,

> The only one of them, so far as known, which affords any available quantity of the mineral is that described as occurring in Quetachoo-Manicougan Bay.[42]

Wabigoon Lake

The following description of the occurrence of molybdenite near Contact bay is given by E. Thomson:

The molybdenite on claim K 645, Contact bay, Wabigoon lake, occurs at a point a few yards from the southwest corner of the claim at the contact between the Laurentian granite and the fine grained Keewatin diorite, in a quartz vein about six inches in width and about 10 feet in length. The vein carries, as well as plates of molybdenite, some pyrite and chalcopyrite. Another occurrence of molybdenite on this same claim is to be found immediately east, at the first point jutting out into the lake east of the Rognon camp. The molybdenite here is right at the water's edge in very small quartz stringers in the regular Keewatin diorite rock, and also to a lesser extent in the country rock itself. It occurs in very tiny flakes, and is associated with pyrite, chalcopyrite, and malachite.

Worthington Mine

Dr. Coleman reports:

> Among the minerals at Worthington occasionally a seam of lead gray molybdenite is found crossing the pyrrhotite, or partly enclosed in the greenstone, but the amount is very small. It seems to have been a later deposit in fissures cutting the ore and country rock.[43]

[42] Geol. Can., 1863, p. 755.
[43] Ont. Bur. Mines, Vol. XIV, 1905, Pt. III, p. 161.

EUXENITE, A RADIO-ACTIVE MINERAL

In South Sherbrooke Township, Lanark County

By

WILLET G. MILLER and CYRIL W. KNIGHT

Occurrence near Maberley

In 1915 a quarry was opened about three miles by wagon road from the village of Maberley, on the Canadian Pacific railway, near the centre of lot 13 in the fifth concession of South Sherbrooke township, Lanark county. The new line of the railway lies about one and one-half miles to the south of the quarry. About 2,000 tons of feldspar were shipped from the quarry to the United States for the purpose of extracting potash from the material. A quantity of feldspar suitable for use in pottery was also produced. During mining operations James A. Morrow, the owner of the land, noticed the presence of a brownish-black mineral with a brilliant lustre. Believing the mineral to resemble pitchblende, and knowing the latter to be valuable as a source of radium, Mr. Morrow sent some samples to Thos. W. Gibson, Deputy Minister of Mines for Ontario. Subsequently, specimens were forwarded by Mr. Gibson to Dr. W. R. Dunstan, Director of the Imperial Institute, London, England. A complete chemical analysis of the mineral was kindly made by the Imperial Institute, and it was identified as euxenite.

The writers paid a visit to the quarry in June, 1917, and found that the mineral does not occur in sufficient quantity to be workable by itself. A certain quantity could be produced as a by-product, were the quarry again worked for feldspar.

In a Granite-Pegmatite Dike

The euxenite occurs in a granite-pegmatite dike having a width of some 75 feet. The dike cuts banded gneiss of pre-Cambrian age, and strikes east and west. The gneiss, which strikes about north and south, and dips steeply to the east, consists of more or less parallel bands, the lighter coloured, more acid bands alternating with the darker ones. It has been shown[1] that the oldest rocks in this part of the Province are of Keewatin age, and are composed of volcanic types consisting of pillow lavas, or other closely related materials. On the surface of these rocks a great thickness of sediments, known as the Grenville series, was deposited, but in many localities has since been removed by erosion. The sediments consist of quartzites, greywackés, limestones and other rocks. Both Keewatin and Grenville series have been more or less altered to schists, and over great areas have been intruded by granite. Frequently the granite occurs in roughly parallel lenses or dikes, more or less parallel to the schistosity of the Keewatin and Grenville schists.

[1] Ont. Bur. Mines, Vol. XXII, 1913, Part 2.

This form of granitic intrusion produces a characteristic banded gneiss. Of course other banded gneisses may be formed by the segregation into parallel bands of the lighter coloured and darker coloured constituents of a cooling magma.

Granite pegmatite dikes, similar to that in which the euxenite occurs, are found in the vicinity of the latter. It is not unlikely, therefore, that euxenite or related minerals will be found in other dikes. The dike that contains the euxenite consists mainly of quartz and perthite—the latter being a mixture of orthoclase, or microcline, and albite. In addition to these minerals there are found black tourmaline, three varieties of mica, namely, black, white and green, and iron pyrites. The quartz and feldspar have at times been segregated into comparatively large masses; for instance, at the time of our visit there was one mass of quartz exposed on the surface 35 feet long by about 10 feet wide. This mass was found in the centre of the dike with its longer axis running about parallel to the edge of the latter. In some parts of the dike, however, the quartz and feldspar are not coarsely segregated, but occur intermixed in grains or masses from the size of a pea to those three or four inches in diameter. The feldspar and quartz are at times associated in such a way as to produce graphic granite. A casual examination of the materials on the dump might not distinguish euxenite from the more commonly occurring black tourmaline; the lustre of the tourmaline, however, is much duller than that of the euxenite. The part of the dike which has been quarried is about 40 feet wide by 70 feet long, with a vertical face at the west end of about 20 feet in height; the east end of the pit is only a few feet deep.

Description of the Mineral

The specific gravity of the euxenite from South Sherbrooke was determined by W. K. McNeill, Provincial Assayer, to be 4.99. The mineral has a light yellowish-red streak, a subconchoidal fracture and hardness of 6.5. The colour is brownish-black, and the lustre brilliant. It occurs in grains, or masses, from the size of a pea to about two inches in diameter. The mineral is found embedded in pink feldspar, or black scaly mica; it may be added that iron pyrites is usually closely associated with it. Crystals of the mineral were not obtained, but crystal outlines were noted in cases where the euxenite was embedded in the pink feldspar. Owing to the brittleness of the mineral it is difficult to free crystals from their matrix. The material occurs sparsely disseminated throughout the dike, but is found in largest quantity about the centre of the latter, in a zone two feet wide. The zone consists of pink feldspar in which are more or less parallel seams of black scaly mica from an eighth to half an inch wide. Iron pyrites is found in this zone, and, owing to its being partly decomposed, the feldspar associated with the euxenite is discoloured.

Chemical Analysis

The analysis of the South Sherbrooke euxenite, Column I, was made by the Imperial Institute, London. The analysis in Column II is quoted from Dana.[2]

	South Sherbrooke Ontario.	Alve, Norway.
	1	2
	Per cent.	Per cent.
Tantalic oxide, Ta_2O_5	13.89	35.09
Niobic oxide, Nb_2O_5	12.73	
Titanium dioxide, TiO_2	27.70	21.16
Thoria, ThO_2	1.34	
Ceria and allied oxides, Ce_2O_3, La_2O_3, etc.	0.62	3.17 (Ce_2O_3)
Yttria and allied oxides, Y_2O_3, etc.	25.64	27.48 (Y_2O_3)
Ferric oxide, Fe_2O_3	2.63	
Ferrous oxide, FeO	0.51	1.38
Manganese oxide, MnO	trace	
Lead oxide, PbO	0.20	
Uranium oxide, U_3O_8	10.50	4.78 (UO_2)
Erbium, Er_2O_3		3.40
Lime, CaO	0.09	
Magnesia, MgO	0.12	
Silica, SiO_2	0.74	
Loss on ignition, H_2O, etc.	3.00	2.63 (H_2O)
	99.71	99.09
Specific gravity	4.99	5.00
Index of Refraction	(n) 2.21 0.01	

Euxenite occurs in several localities in Norway. It is also reported by A. Lacroix to probably occur in Madagascar, but the mineral was not definitely determined.[3] In the latter locality it is found in a granite pegmatite.

Referring to the analysis of the South Sherbrooke euxenite, Dr. Dunstan says:

> Assuming that the radium-uranium ratio in this mineral is normal, viz., 3.4×10^{-7}, the quantity of radium present in one ton of ore would be about 30 milligrams.
>
> The mineral should be of value as a source of uranium and radium if it is obtainable in considerable amount.[4]

A large number of minerals containing the rare earths and other elements are found in association with the feldspar, mica and quartz of pegmatite dikes in various parts of the world. Owing to the difficulty of making chemical analyses of them, their identification in many cases can be considered to be only provisional. Among these minerals reported from the Province of Quebec are the following[5]: uraninite and monazite from Villeneuve mica mine, Lièvre river; samarskite and fergusonite from Maisonneuve mica mine, Berthier county; cleveite, Pied des Monts mine, Murray bay; orthite or allanite, Taché township, Lake St. John. Columbite and other minerals occur with beryls and amazonite in a pegmatite on

[2] Descriptive Mineralogy, 6th Ed., p. 744.

[3] Bull. de la Soc. Franc. de Mineralogie.

[4] A useful book dealing with the uses of these elements is entitled "The Rare Earth Industry," by Sydney J. Johnstone, Senior Assistant, Scientific and Technical Department, Imperial Institute, with a chapter on "The Industry of Radio-active Substances," by Alexander S. Russell.

[5] J. Obalski, Can. Min. Inst., Vol. IX, pp. 72-73.

lot 23 in the fifteenth concession of the township of Lyndoch, Renfrew county, Ont.[6] Reference to other occurrences of these minerals in Canada are given in R. A. A. Johnston's "A List of Canadian Mineral Occurrences."[7]

That there is at least one other rare mineral, in addition to euxenite, in the South Sherbrooke deposit is seen from the following quotation from a letter, dated Oct. 1st, 1917, from Mr. R. A. A. Johnston, mineralogist and curator of the Geological Survey, Ottawa, to W. G. Miller:

> . . . . there has come into my hands a large specimen of the material, which I have had sectioned. The section shows that instead of there being but one mineral there are two. The euxenite generally forms well-defined layers, whereas the other mineral, which is of a paler shade and shows a distinctly sub-metallic lustre, forms nodules from the size of a pea up to three-quarters of an inch in diameter in the euxenite.

[6] W. G. Miller, Ont. Bur. Mines, Vol. VII, 1898, pp. 234-237, 1897.
[7] Memoir 74, Geol. Sur. Canada.

LATERITIC ORE DEPOSITS*

With Comments on the Nature of Laterites in General

By

WILLET G. MILLER

Introduction

Although ore deposits of lateritic origin do not occur in Canada they are, at least, of economic interest here. The nickel ores of New Caledonia, which has been the only serious competitor with Sudbury, and the nickeliferous iron ores of Cuba, the production of which may have some effect on the output of the iron ores of the Lake Superior region, are of the nature of laterite.

While the name laterite was introduced over a century ago, 1807, for certain superficial deposits, red "earth," of India, from which bricks (*later*, a brick) were made, it is only within the last two decades that careful study has begun to be undertaken of the materials to which the name has been more or less loosely applied. During the last ten years, a number of papers dealing with laterites have been published in the Geological Magazine, and the Geological Survey of India has given much attention to the subject. It would appear, however, that much systematic work remains to be done.

L. L. Fermor says: Few natural mineral products have aroused more general interest or been more provocative of discussion amongst geologists than that superficial rock-formation so typical of the tropics known as laterite. This material excites interest not only because of its chemical composition, but also on account of its wide distribution. It has been recorded, for instance, from tropical South America (e.g., the Guianas and Brazil), Central Africa (e.g., Guinea and East Africa), the Seychelles, India, the Malay Peninsula, the East Indies and Western Australia. Many papers have been published dealing with its distribution, composition, and also its origin, to explain which many hypotheses have been invented.[1]

From following quotations concerning the character of laterite, it will be seen that only two kinds of superficial weathering of silicate rocks have been recognized, by writers on the subject, viz., (1) that which gives rise to so-called laterite, silica and certain other constituents being practically all carried off in solution, and (2) weathering in temperate climates which gives rise to clay, in which the silica remains combined with alumina and water. The author desires to point out, however, that there are at least two other kinds of weathering, viz., (3) that represented by the nickel ores of New Caledonia, which contain a comparatively high percentage of silica combined with magnesium and other elements, and (4) the bauxite deposits of Arkansas, higher in silica in certain of their upper layers than in the bauxite below. Tables of analyses of both the New Caledonia nickel ores and the bauxites of Arkansas are given on following pages. From a consideration of them it would appear that the present, accepted definition of the term laterite should be modified, or that the term should be employed only in its former general or stratigraphic sense.

A brief description of the lateritic deposits of the several metals, that occur in important quantities in such deposits, is given on following pages.

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* A paper presented before the Royal Society of Canada, Section IV, May, 1917.

[1] Geol. Mag., Vol. VIII, 1911, p. 454.

Although the Cuban deposits have been studied only within the last ten years, a much more systematic chemical examination has been made of them than of laterites in any other part of the world. Indeed, practically the only published analyses of laterites at various depths in the deposits are those of Cuba. Writers on other deposits have been content, in most cases, to give analyses representing merely the upper parts of the weathered material, thus ignoring the fact that there is no sharp line of division between the more highly oxidized and leached capping and the underlying material. As shown in a following table of analyses, a high percentage of alumina, for example, is characteristic of only a foot or two of the uppermost part of some deposits, while in other cases it extends downward much farther. The most detailed analyses available, those of Cuban deposits, 35 or 40 feet in thickness, that have been made of samples, representing each foot in thickness, show clearly that the change in chemical composition is gradual. The name laterite should, therefore, not be applied merely to the red-coloured surface layers of the deposits. In Cuba the iron-ore deposits at Mayari are mined by steam-shovel methods to an average depth of about 19 feet. The upper layer, 5 or 6 feet in thickness, is of a crimson-brown hue: the middle layer, of greater thickness, is yellowish-brown, and the lower layer, also 5 or 6 feet thick, is of a lighter shade of yellowish-brown. The difference in colour of the layers is due chiefly to the state of oxidation of the iron, but is also influenced by the percentage of alumina.[1]

As a member of the Royal Ontario Nickel Commission, the author visited both Cuba and New Caledonia during the year 1916. The deposits of these two widely separated islands are the most important from the economic point of view of any of those yet exploited. It may be added that the cobalt deposits of New Caledonia, also of lateritic origin, controlled the world's markets for the ore of this metal, prior to 1903 when those of Cobalt, Ontario, were discovered.

In addition to those of iron, nickel and cobalt, other ores of lateritic origin that have been worked include certain manganese, aluminum (bauxite) and gold deposits. Lateritic ores emphasize the importance of the igneous rocks, especially, as a source of metals.

In discussions which have taken place as to the character of laterite, it has been generally agreed that the term should be applied to subaerial decomposition products that contain a low percentage of combined silica, existing as hydrated aluminum silicate, as contrasted with clays of similar origin. Fermor would limit the combined silica to 5 per cent. in pure laterite. It will be seen from following analyses of the Cuban materials, from the surface to a depth of twenty feet or more, table No. 4, that they fall within Fermor's classification of laterites. On the other hand, the New Caledonia nickel ores contain from 35 to 50 per cent. of silica, table No. 2, not in the form of clay but with much hydrated nickel magnesium silicate. The question then arises as to whether or not these New Caledonia materials should be classed as laterites as defined by Fermor and other writers. While they contain iron and aluminum in the form found in what have been called true laterites, they differ from them in the content

[1] A list of publications on the Cuban deposits is given in J. F. Kemp's instructive paper, The Mayari Iron-Ore Deposits of Cuba, A.I.M.E., Vol. LI, 1915.

of combined silica and in the comparatively high percentage of magnesia. These nickel ores do not seem to have been considered by the various writers who have discussed the question "What is laterite?"

Laterite and Clay

Fermor defines laterite, and distinguishes it from clay, in the following words:—

> One should not decide whether a given rock is laterite on the basis of the presence or absence of alumina in quantity, but on the presence or absence of any considerable proportion of combined silica. Combined silica means the presence of kaolin or lithomarge, and the larger the amount of such material the closer does the rock approach a clay in composition. Now clays[a] are to be regarded as the end products resulting from one mode of superficial decomposition of rocks, and laterites as the end products of another totally distinct mode of decomposition. When a rock breaks down into a *clay* hydrated aluminum silicate is to be regarded as the pure end product, all oxides being removed in solution. When a rock is converted into *laterite*, on the other hand, the reverse holds; aluminum and other silicates are decomposed, and the silicate is removed in solution, presumably in the colloidal form, whilst the oxides of iron, aluminum, titanium, and manganese, which were relatively soluble under the clay-forming conditions, are relatively insoluble under laterite-forming conditions. The oxides of calcium, magnesium, sodium, and potassium are apparently soluble under both sets of conditions. I do not propose to advance here any reasons to account for these two diverse modes of surface alteration of rocks, nor to say anything about the conditions, whether climatic or organic, that bring them about, but to deal only with the results of such changes. *Pure clay*, then, is hydrated aluminum silicate, whilst *pure laterite* is a mixture of one or more, or all, of the oxides of iron, aluminum, titanium, and manganese, more or less hydrated, which I refer to in this paper as the lateritic constituents. Manganese oxide is a somewhat exceptional constituent, and when present usually segregates into masses of comparatively rich manganese-ore, as a rule either psilomelane or pyrolusite.[1]

C. M. Weld in describing the Cuban deposits gives a definition of laterite similar to that of Fermor, as follows: "The ore is, in fact, a laterite, a product due to the peculiar form of decomposition known as laterization, which is common to humid tropical climates. The essential characteristic of laterization is the breaking-up of the silicates, with the ultimate almost complete removal of the silica, wherein it differs radically from the kaolinization-processes of the temperate zones."[2]

In order to show the difference in the products of weathering of rocks of similar character in tropical and temperate climates, respectively, Hugh Warth published some interesting analyses of dolerites of India and Great Britain and of their weathered products.[3] The following table shows the results of analyses, the comments on the table being taken from Warth's paper:—

> Column i of the table represents the composition of the original Rowley Regis rock, which was obtained as the average of three analyses, two of them by J. H. Waller and a third analysis by Henry.
>
> Column ii, the weathered product of Rowley Regis (steam dry).
>
> Column iii, composition of Dolerite from Poonah on the Western Ghâts in the Bombay Presidency (analysed by my son F. J. Warth, M.Sc.).
>
> Column iv, the composition of the Laterite which rests on the dolerite at Mahabaleshwar, which is also situated on the Western Ghâts (see p. 155, Dec. iv, Vol. X, of this Magazine, April, 1903, by H. & F. J. Warth).

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[a] *i.e.*, clays formed in situ as distinguished from those deposited as aqueous sediments.

[1] Geol. Mag., Vol. VIII, 1911, pp. 459, 460.

[2] A.I.M.E., Vol. XL, p. 305.

[3] Geol. Mag., 1905, p. 21.

	Rowley Regis		Western Ghâts	
	I	II	III	IV
SiO_2	49.3	47.0	50.4	.7
TiO_2	.4	1.8	.9	.4
P_2O_5	.2	.7	....	....
Al_2O_3	17.4	18.5	22.2	50.5
Fe_2O_3	2.7	14.6	9.0	23.4
FeO	8.3	....	3.6	....
MgO	4.7	5.2	1.5	....
CaO	8.7	1.5	8.4	....
K_2O	1.8	2.5	1.8	....
Na_2O	4.0	.3	.9	....
H_2O	2.9	7.2	.9	25.0
Total	100.4	99.3	100.5	100.0

This table shows the striking difference between the weathering of the Rowley Regis Dolerite and that of the Dolerite of Poonah, which so far may represent the whole of the Deccan Trap. Whilst the Rowley Regis Dolerite yields a product (column ii) which differs comparatively little from the original rock, this Dolerite of the Western Ghâts is altogether changed into a mixture of aluminum hydrate and ferric oxide, the most remarkable fact being the nearly perfect removal of the silica in the latter case. . . .

No chemical reaction is known which can account for such a complete removal of silica as has occurred in India, neither is there any explanation why such a reaction should work in India and not in England. The only hypothesis we have is the one based on Mr. T. H. Holland's novel and ingenious suggestion that the silica might be rendered soluble by lowly organisms which can thrive in the uniformly warm climate of the tropics, and not in a region of lower and varying temperature. However, there is as yet no actual proof for this hypothesis, and under the circumstances it may not be inappropriate once again to draw the attention of chemists to this remarkable phenomenon in case there might after all be a strictly chemical solution of the problem.

The weathered product from India may be classed as bauxite. In the Rowley Regis rock there is no tendency towards the formation of bauxite. The weathered material on the surface of the dolerite in the latter locality has a thickness of about twenty feet.

That very few chemical examinations of laterites have been made till recent years is shown by the following quotation from T. H. Holland's paper published in 1903.[1] Laterites had been frequently described as ferruginous clays. Holland says: "Dr. Warth's suggestion naturally occurred to me, and steps were taken to investigate the chemical constitution of laterite; but before any real progress in the work had been made, Dr. Bauer's paper appeared, and, as I think, practically settled the question. What is true of the Seychelle laterite must, so far as one can judge, be true also of the laterites in India which have not been sifted by running water."

Regarding the origin of laterites Holland says:[2]

Now, putting these facts together, I would suggest that we look for the explanation of laterite, not in simple chemical reactions, but in the action of some lowly organism having the power of separating the alumina, which, after the manner of many plants, it does not want, from the silica, which is necessary for its life, but which, being in a soluble form, is removed again by the alkaline solutions. Such a form of life might thrive in the moist climate of the tropics, even to a temperate altitude, but might find life intolerable in a land subject to severe winters, such as we get in the temperate zone and in North India, where

[1] Geol. Mag., 1903, p. 60.
[2] Ibid, p. 63.

we find no laterite. Such an organism would form *kunkar* as well as laterite in a moist, warm climate, the difference in the products being due merely to their after-treatment by water. For obvious reasons, too, such an organism could not live under conditions of kaolinization. But apart from the agency of life I see no chemical reason why an aluminous silicate should undergo a more complete decomposition at the comparatively low temperature of the tropics than at the high temperature of subterranean situations; the contrary, indeed, seems more natural. And if the temperature *does* so affect chemical action we still might wonder why laterite does not occur on the foot-hills of the Himalayas, where there is an abundance of moisture and where the average annual temperature is as high as on the Nilgiris. Chemical changes which cease at low temperatures commence again as soon as the suitable physical conditions are restored, and laterite, consequently, would be expected to form in North India during the summer. But the distribution of an organism might very well be limited by the extremes of climate, when possibly the average annual temperature is not below what would be congenial to it if maintained.

If this fancy turns out to be well founded we must add laterization to the long list of tropical diseases, against which even the very rocks are not safe. But it is a big step between the establishment of a reasonable suspicion and the actual detection of the bacillus at work. There may be many forms of life taking advantage of the soft, moist, lateritic medium, but it will not be an easy matter to convict, amongst these, such as may take an active part in breaking up the aluminous silicates.

It is hard to believe that the few degrees by which a tropical exceeds a temperate climate is sufficient to so strikingly increase the chemical activity of the weak organic acids percolating through the soil. But that such a small difference of temperature affects low forms of life is painfully evident to those who have to maintain the daily fight of life in the tropics.

Laterization Conditions in Cuba and New Caledonia

While certain features of Cuba are similar to those of New Caledonia, both being islands and the one lying about the same distance north of the equator that the other does to the south, the temperature and rainfall, factors in laterization, are somewhat different. The mean temperature of Cuba is given as 76.8°, the lowest average occurring in January when it is 70.3° and the highest in July, when it is 82.4°; the average rainfall for the past twenty-five years has been 53.57 inches.[1] This average temperature has apparently been determined without taking into consideration that of the greater altitudes. The mean minimum temperature of New Caledonia is said to be 63° and the mean maximum 83°; between 1908 and 1912 the average rainfall was 72.6 inches, but varies greatly in different years, in 1910 being 96 inches while in 1911 it was 49.7.[2] There is, of course, no means of determining what changes have taken place in the climates of the two islands during the vast period in which laterization has been in progress.

While the process of laterization is still in progress on both islands, the greater part of the deposits was formed long ago. A. C. Spencer says: "The residual ores of Cuba were formed in Tertiary time, in large part, and perhaps entirely, prior to the deposition of the Lafayette (Pliocene) formation of the Atlantic Coastal plain."[3] The basic rocks from which the serpentine of New Caledonia has been derived are considered to be of post-Cretaceous age.

Regarding the mode of formation of the Cuban ores, C. M. Weld has said: "At the same time there is no reason to suppose that laterization processes have ceased; it is in fact probable that new ores are forming to-day wherever opportunity offers. Such opportunity may be considered as at a minimum on the plateaus,

[1] Official Handbook, "Cuba Before the World," Panama-Pacific International Exposition, 1915, p. 22.

[2] Report Roy. Ont. Ni. Com., p. 240.

[3] Occurrence, Origin and Character of the Surficial Iron-Ores of Camaguey and Oriente Provinces, Cuba, A.I.M.E., Vol. XLII, p. 106.

where heavy mantles of material lying nearly horizontally effectively protect the underlying rock from the action of the surface waters."[1] The occurrence of the Cuban ores, for the most part, on plateaus presents a difference from that of the nickel ores of New Caledonia which are found on hillsides. Many of the serpentine areas of the latter island are broken and dissected, and the plateau structure is not prominent. Hence there has been more working over of the laterite in this island than in Cuba, and there has been more opportunity for the concentration of the nickel contents, the metal being first leached out by water and then deposited at lower levels on the hillsides. Fissures in the rocks also assist in concentration of the nickel.

In general appearance the deposits of Cuba and New Caledonia present a striking likeness, only chemical analysis brings out the fact that certain of the deposits of the latter island are much richer in nickel than any of those discovered in Cuba, and that they contain a high percentage of combined silica and of magnesia.

Composition of Laterites

Table No. 1 shows the composition of laterites from several countries. It has been compiled from various publications.[2] The analyses of the New Caledonia samples were kindly made for the author by A. L. Clark of Toronto. In certain cases magnesia and other constituents while present have not been determined. Much more complete analyses of the New Caledonia nickel ores are given in table No. 2. This table is of special interest, owing to the content of silica and magnesia of the ores. The composition of the New Caledonia cobalt ores is given in table No. 3, that of the Cuban iron ores in table No. 4, manganese ores of India in No. 5, and bauxite or aluminum ores of Arkansas in No. 6.

[1] The Residual Iron-Ores of Cuba, A.I.M.E., Vol. XL, p. 310.

[2] Analyses of Cuban samples are taken from publications by Kemp and by Leith and Mead, to which reference is made in this paper; the analysis, India (1), is quoted on a preceding page; that of India (2) is quoted by Clarke, data of Geo. Chem., 3rd Ed., p. 495; that of F. Guinea is from A. Lacroix; those of Borneo and the Philippine Ids. are from Roy. Ont. Ni. Com. Report, pp. 266 and 278.

TABLE No. 1

Analyses of Laterites at Various Depths from Surface

(Note Content of Silica and Magnesia in New Caledonia Ores, Table No. 2.)

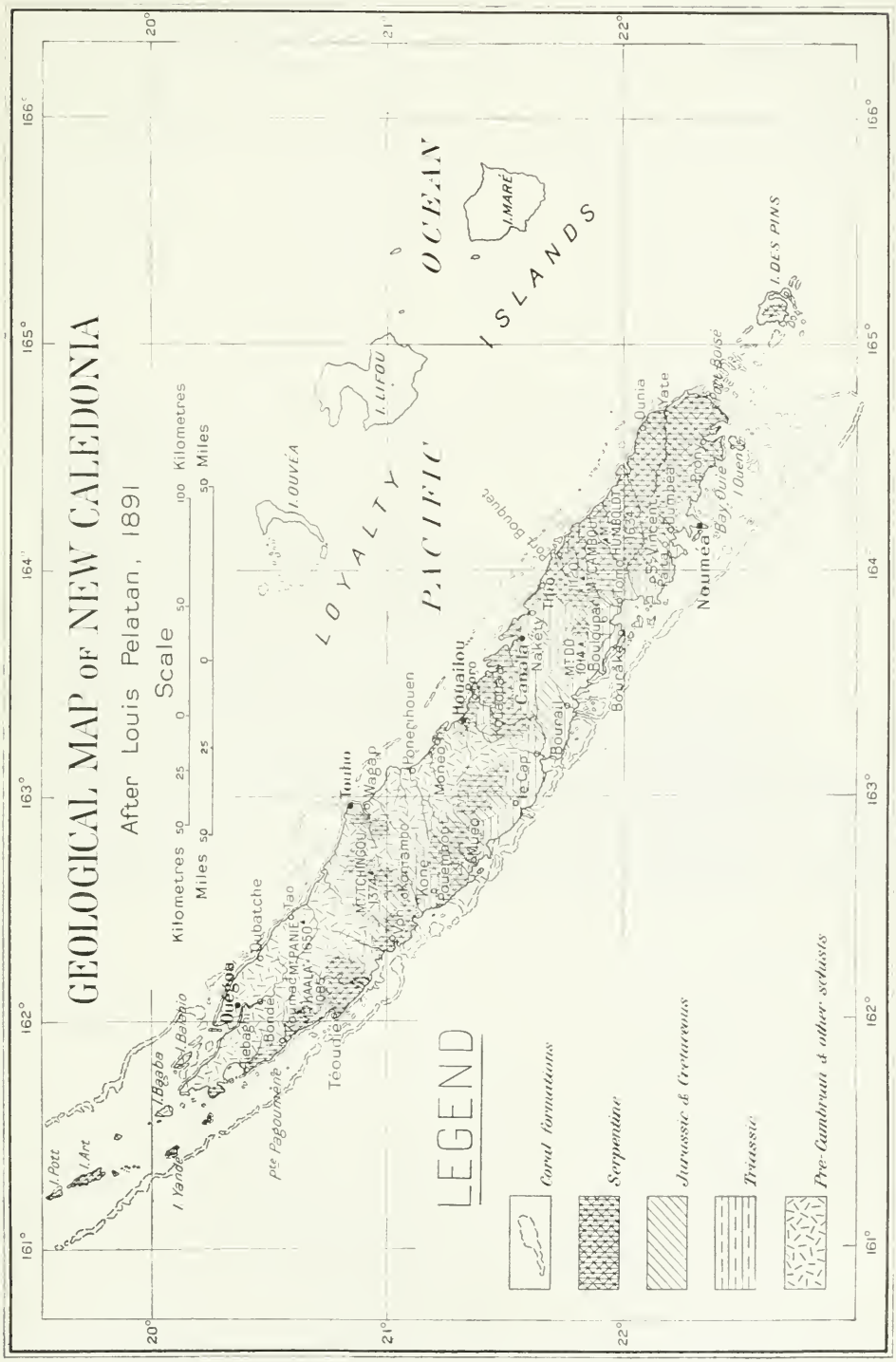
	Depth Feet	SiO_2	TiO_2	MgO	H_2O	Cr_2O_3	Al_2O_3	Fe	Ni+Co
1st Layer.									
Kataviti, N. Caledonia	0–1½	4.2	.....	0.25	11.20	2.16	5.8	51.1	1.95
Dumbéa, N. Caledonia	0–4	5.8	.....	0.30	.....	.....	6.1	50.0	1.69
Mayari, Cuba, 1	0–4	2.49	.....	.....	9.87	1.42	17.04	46.4	0.37
Mayari, Cuba, 2	.....	2.26	.....	.....	11.15	1.89	14.9	48.65	0.59
India, 1	.....	0.70	0.40	.....	25.00	.....	50.5	16.38	.....
India, 2	.....	0.90	1.59	0.20	14.39	.....	26.27	56.01	.....
F. Guinea	.....	2.80	.....	.....	11.40	trace	8.7	54.04	.....
Borneo	0–6	2.75	.....	.....	.....	3.36	.....	53.09	0.39
Philippine Ids.	surface	1.04	.....	.....	6.60	1.15	10.56	54.29	.....
2nd Layer.									
Kataviti	1½–3	26.4	.....	15.60	12.60	1.30	2.4	18.3	6.66
Dumbéa	4–8	8.2	.....	1.70	11.20	.....	4.0	47.5	1.47
Mayari, 1	4–8	2.33	.....	.....	11.60	2.66	7.97	50.32	0.92
Mayari, 2	.....	2.70	.....	.....	12.90	3.17	7.13	51.32	1.20
Borneo	6–9	2.35	.....	.....	.....	3.22	.....	50.01	0.41
3rd Layer.									
Kataviti	3–4½	32.2	trace	.....	.....	0.55	1.5	11.7	7.49
Dumbéa	8–12	23.6	trace	4.8	8.70	1.56	2.8	35.5	2.05
Mayari, 1	8–12	2.72	.....	.....	12.31	3.11	6.88	50.04	1.25
Mayari, 2	.....	7.54	.....	1.5	12.75	3.66	4.97	46.52	2.10
Borneo	9–15	2.30	.....	.....	.....	2.99	.....	51.69	0.45
4th Layer.									
Dumbéa	12–16	45.0	.....	15.80	6.70	.....	0.9	16.8	2.49
Mayari, 1	12–16	2.6	.....	.....	12.85	2.75	6.52	47.18	1.36
5th Layer.									
Dumbéa	16–20	42.8	.....	.....	.....	.....	4.8	16.3	3.64
Mayari, 1	16–20	4.17	.....	.....	12.25	3.33	6.74	47.72	1.36
6th Layer.									
Mayari, 1	20–24	10.71	.....	.....	12.74	3.08	5.80	43.79	1.58
7th Layer.									
Mayari, 1	24–29	35.99	.....	21.56	14.57	2.12	4.11	29.50	1.74

Nickel Ores

New Caledonia has been a producer of nickel ores of lateritic origin since 1875[1]. Similar ores in another French island, Madagascar, have attracted attention during recent years but little mining has been done there[2]. Garnierite ores, like those of the two countries just mentioned, have also been shipped from Greece.[3]

New Caledonia, between latitude 20° 5′ and 22° 16′ S. and between longitude 164° and 167° 50′ E., has a length of about 250 miles and an average breadth of less than 30 miles, the maximum being about 40. Serpentine, derived from peridotites and other basic rocks, occupies about one-third of the surface of the island. Resting in situ over much of the surface of the serpentine are loose products of weathering of varying thicknesses, at least the upper parts of

[1] Report Roy. Ont. Ni. Com., pp. 234-264.
[2] Ibid. pp. 276, 277.
[3] Ibid. pp. 272-275.


GEOLOGICAL MAP OF NEW CALEDONIA
After Louis Pelatan, 1891
Scale
Kilometres 50 25 0 50 100 Kilometres
Miles 50 25 0 50 Miles
LEGEND
Coral formations
Serpentine
Jurassic & Cretaceous
Triassic
Pre-Cambrian & other schists
LOYALTY ISLANDS
PACIFIC OCEAN
I. OUVÉA
I. LIFOU
I. MARÉ
I. DES PINS
Noumea
Bay, Quen
Port Boise
Port Bouquet
Houailou
Canala
Nakety
Thio
Bouraï
Boulouparis
Bourail
Kouaoua
Moindou
Kone
Pouembout
Koumac
Ouaième
Tiwaka
Ouenarou
Ouatchia
Ouaménie
Ouégoa
Poya
Pouebo
Hienghene
Tiendanite
Touho
Wagap
Poindimié
Ponerihouen
Kouaoua
Mt. Panié
Mt. Kaala
Mt. Mitchingou
Ouébatche
Diahot
Ouaième
Tao
Bonde
Nebeng
Ouégoa
Diahot
Pte Pagoumenie
Teoudié
I. Art
I. Pott
I. Yandé
I. Babio
I. Bagabe
Kubatche
Mt. Panié
Mt. Kaala
Mt. Mitchingou
Mt. Koghi
Mt. Ouin
Mt. Boulinda
Mt. Ouin
Mt. Koghi
Mt. Mitchingou
Mt. Kaala
Mt. Panié

which, as shown from the analyses in a preceding table, would be called laterite. But, taken as a whole, these products of weathering, as the analyses show, differ greatly, especially in their content of combined silica, from those that have been described as true laterites from other countries. They also differ from clays in that the silica does not exist in combination with the alumina but with magnesium, nickel, and other elements, the hydrated nickel-magnesium silicate, garnierite, being the most important economic constituent.

The following table, No. 2, of analyses of ores, that are shipped from various localities in the island, shows a striking difference, in the high percentages of silica and magnesia, and the comparatively low percentages of alumina and iron, from the lateritic iron ores of Cuba, for instance. Other analyses are given in table No. 1.

Mining Lateritic Nickel Ore, New Caledonia.

In mining, the upper layer of the deposits, high in iron and low in magnesia and silica, is stripped off. This layer, as shown in the case of the Kataviti mine, in analyses given in table No. 1, is sometimes only a foot or two in thickness, but sometimes much greater. Then the ore, richer in nickel, lying below, is excavated down to a point where the rock becomes hard and compact. The decomposed rim, of a thickness of two or three inches or more, that coats the surface of boulders, that lie near the bottom of the loose material, is scraped off and added to the ore pile. The ore is piled in small heaps, carefully sampled, and the lower-grade ore mixed with the higher so as to form a product containing, as the table shows, an average of about six per cent. of nickel. The lateritic iron ore is not used, although it occurs in quantity on the island in deposits parts of which are workable as sources of nickel and elsewhere.

Production of nickel ore began in Sudbury in 1887, but the competition with New Caledonia was so keen that it was not until 1905 that Sudbury definitely outdistanced its rival. With the exception of Sudbury, New Caledonia has no

TABLE No. 21

Selected Analyses of Types of New Caledonia Nickel Ores

Name of Mine.	Situation.	Per cent H_2O dried at 100°C	Ni	Co	Fe	Al_2O_3	CaO	MgO	SiO_2	Loss on ignition.	Cr_2O_3
Fathma	Poro, East Coast	?	6.51—(Ni & Co)		9.32	1.20	traces	16.36	49.60	?	?
Houailou	" "	?	4.84		10.63	0.52	"	22.16	45.64	10.78	1.40
Circé	Between Thio and Nakéty	?	6.97		10.20	1.27	"	17.40	50.62	?	?
Elise	Thio	26.61	6.80		11.92	1.30	"	19.30	38.52	?	?
Prises Alma & Rivoa	Port Bouquet E. Coast	22.86	6.46	0.13	12.81	0.20	"	24.95	36.82	?	1.20
" "	" " "	23.79	6.77	0.10	12.21	0.62	"	26.30	34.72	?	1.20
Puy. de Dome & Lucie	S." " "	?	6.47—(Ni & Co)		Fe_2O_3 & Al_2O_3	16.79	?	27.89	35.78	12.09	*
Etoile du Nord	Massif Kaala, W. Coast	22.53	6.82—(Ni & Co)		12.51	0.63	.....	22.39	38.74	.....	*
Nouvelle-Espérance	Massif Ouazangou W. Coast	26.30	6.78—(Ni & Co)		12.27	1.42	.....	23.19	39.76	.....	*
Mines de Voh	Massifs Katepahie & Koniambo	22.60	6.67	0.13	13.83	0.77	.....	21.11	42.10	.....	*
Kataviti'	West Coast	23.91	6.19	0.10	9.10	0.73	.....	24.18	41.20	.....	1.24
"	" "	24.00	5.71	0.12	9.95	0.77	.....	23.91	45.88	.....	*
Annie	Massif du Kongouhaou	?	7.74—(Ni & Co)		12.18	0.73	.....	18.02	47.79	.....	*
Souza	Region Dumbéa	?	5.45	?	12.65	1.42	.....	23.26	38.56	.....	*
Monnaie	" "	?	4.68	?	9.44	1.07 1.10	.....	20.43 18.90	46.69 49.98	9.08 9.30	0.60 0.57
Gracieuse	" "	27.50	7.26	0.15	11.10	0.41	.....	27.03	36.90	8.95	1.38
Le Pic	" "	26.04	6.35	0.11	12.59	1.24	0.08	24.21	37.75	10.30	0.60
Barbouilleurs	" "	?	6.67—(Ni & Co)		13.58	1.17	.....	15.40	48.60	.....	*
Tip Top	" "	?	4.75—(Ni & Co)		12.38	1.28	.....	29.43	35.11	10.23	1.47
Tamanou	Uié Bay, S. of Island	?	5.93—(Ni & Co)		11.15 11.55	0.59 0.59	.....	27.38 28.51	34.73 34.59	14.10 16.02	.....

With the exception of the uncombined water, the analyses represent the composition of the ores after drying at 100° C. Leaner ores are mixed with richer to produce a material for shipping that contains about 6 per cent. of nickel. Garnierite varies greatly in composition, owing to mutual replacement of nickel and magnesium.

† From Report of Roy. Ont. Ni. Com., 1917, p. 248.

* Comprised in silica.

serious rival. This illustrates sufficiently the importance of the lateritic nickel deposits of the island colony.

During recent years, under normal conditions, the annual output of New Caledonia is between 5,000 and 6,000 tons of metallic nickel. In 1916 Sudbury produced 11,000 tons, an abnormally high output due to demands created by the war.

Nickel Mine at Dumbéa, New Caledonia.

Cobalt Ores

The lateritic cobalt ores of New Caledonia occur under the same conditions as do manganese ores of India, of similar origin, described by Fermor and others. While the cobalt ores are of indefinite composition, the name asbolite is usually applied to them. The metals cobalt and manganese are carried downward in solution and, in certain cases, through some little understood cause, finally segregate into nodules and irregular veins or veinlets in the mass of the laterite. In so far as the author observed, deposits of laterite that are worked for nickel in New Caledonia have not been worked for cobalt, although deposits of both metals in some places occur close together, as at Poro on the east coast of the island. Cobalt is becoming of increasing importance as a constituent of alloy steels, and probably the deposits of the metal in New Caledonia will again become of economic value, especially as those of Cobalt, Ontario, are of decreasing importance.

The following analyses of New Caledonia cobalt ores are taken from E. Glasser's report.[1] They show the variable composition of the ores.

[1] Richesses Minérales de la Nouvelle-Calédonie, Paris, 1904.

TABLE No. 3

Analyses of New Caledonia Cobalt Ores

	1	2	3	4	5	6
SiO_2	50.75	32.00	34.00	16.40	2.20	23.09
Fe_2O_3	11.50	20.00	11.43	15.50	8.91	16.06
Mn_3O_4	14.60	26.50	19.05	12.07	43.62	17.59
Al_2O_3	.....	.....	.....	14.60	14.29	10.30
MgO and CaO	14.50	3.06	.....	.....	2.38	2.23
CoO	2.50	3.50	3.80	3.00	7.06	5.56
NiO	.....	.....	1.04	1.48	1.64	1.48
Water, etc., loss on ignition	6.80	15.50	30.68	36.95	29.20	25.69

Iron Ores

While lateritic iron ores have been smelted in small primitive furnaces in India and elsewhere for a long period, it was only with the discovery of the true character of the Cuban deposits and their development that ores of this class came to receive due attention. In three or four areas in Cuba that have been carefully examined there are estimated to be a total of at least 3,000,000,000 tons of merchantable ore which can be mined by steam shovel methods. In the present workings the ores are mined to an average depth of about 19 feet. In addition to their mode of occurrence and origin, these ores are of interest owing to their containing two metals, nickel and chromium, of great importance in alloy steels. The composition of the ores is shown in table No. 4. Shipments of these ores to the United States began early in 1910. The nodulized or dehydrated ore averages: Fe 55-56 per cent., Ni 1-1.2, Cr about 1-2, SiO_2 4-4.4, Al_2O_3 11-11.5, absorbed water 3-3.5.

More recently large deposits of ores of similar character and origin have been discovered in Borneo, island of Seboekoe, where the quantity is estimated to be at least 300,000,000 tons. One of the Philippine Islands, Mindanao, has deposits of even greater size, 400,000,000 tons or more, the character of which was not recognized till 1914.[1]

While lateritic iron ores have now been proved to be of great economic importance, it is interesting to note that scarcely more than a decade ago those of a country as accessible as Cuba lay with their importance unrecognized. The character of the small nodules of ore that are found at the surface of the deposits was known, but the "red earth" with which they were associated was thought to be clay. Almost by accident the "clay" was discovered to be valuable iron ore.

Lateritic iron ores of the character of those of Cuba are to be looked for in every tropical country where basic rocks have been subjected to prolonged weathering. These ores are destined to play a very important part in the iron industry.

The percentage of combined silica in the Cuban deposits, whether they are of the nature of laterites, as defined by Fermor, or whether they are of the nature of ochre, ferruginous clay, was for a time of great legal importance. The title to the lands, which had been applied for or denounced as iron ore deposits, depended on whether the ores were true iron ores or whether they were ochres

[1] See Report Royal Ont. Ni. Commission for summary of the literature on iron ores of the three countries mentioned.

(limonite and clay).[1] Evidence that the deposits contained little combined silica, clay, confirmed the titles of those who had denounced the deposits as iron ores against those who had denounced them as ochres.

The following table shows the character of the ore at various depths, in the Mayari area:

TABLE No. 4

Chemical Analyses Showing Alteration of Serpentine Rock to Iron Ore in the Mayari District, Cuba.[2]

Analyses supplied by Spanish-American Iron Co.

Depth, Feet	SiO_2	Al_2O_3	Fe_2O_3	Fe	MgO	Cr	Ni+Co	P	S	H_2O+	Total
0- 1	2.58	15.71	66.20	46.37	.....	0.92	0.38	0.016	0.12	10.20	96.126
1- 2	2.38	20.81	64.70	45.34	.....	0.96	0.33	0.022	0.12	10.63	99.952
2- 3	1.60	17.43	68.40	47.81	.....	0.96	0.42	0.018	0.14	9.15	98.118
3- 4	1.42	14.23	68.70	48.09	.....	1.04	0.36	0.019	0.16	9.50	95.429
4- 5	1.56	8.47	70.60	49.46	.....	1.27	0.61	0.016	0.17	10.14	92.836
5- 6	2.90	10.24	72.35	50.56	.....	1.66	0.84	0.016	0.20	10.96	99.166
6- 7	2.20	8.29	72.90	51.00	.....	2.19	1.09	0.007	0.19	11.35	98.217
7- 8	2.68	4.92	71.85	50.28	.....	2.19	1.15	0.006	0.14	11.57	94.506
8- 9	3.30	7.25	71.55	50.15	.....	2.39	1.14	0.006	0.16	12.12	97.916
9-10	2.44	6.91	72.40	50.63	.....	2.08	1.21	0.005	0.16	12.35	97.555
10-11	2.42	6.31	71.40	49.94	.....	2.00	1.36	0.005	0.14	12.40	96.035
11-12	2.72	7.05	70.55	49.46	.....	2.08	1.31	0.004	0.15	12.40	96.264
12-13	2.56	6.77	70.20	40.08	.....	1.62	1.37	0.004	0.10	13.50	96.124
13-14	2.52	6.23	70.55	49.46	.....	1.85	1.41	0.005	0.14	13.12	95.825
14-15	2.76	6.58	71.85	50.22	.....	1.89	1.38	0.007	0.21	12.45	97.127
15-16	2.78	6.53	70.00	48.98	.....	2.16	1.33	0.007	0.19	12.35	95.347
16-17	2.98	6.43	69.80	48.84	.....	2.19	1.42	0.007	0.19	12.57	95.587
17-18	3.20	5.53	70.45	49.32	.....	2.00	1.35	0.007	0.15	12.90	95.587
18-19	3.66	6.51	69.20	48.42	.....	2.43	1.34	0.005	0.06	12.73	95.935
19-20	6.84	8.49	63.35	44.32	.....	2.51	1.36	0.004	0.08	12.80	95.434
20-21	7.44	5.13	66.55	46.58	.....	2.27	1.57	0.003	0.09	12.45	95.503
21-22	8.46	4.99	57.80	40.47	0.00	2.16	1.47	0.006	0.08	12.71	87.676
22-23	11.04	8.38	62.10	43.49	0.00	1.85	1.74	0.002	0.09	14.07	99.272
23-24	15.86	4.70	63.90	44.62	0.00	2.19	1.57	0.003	0.09	11.73	100.043
24-25	17.40	4.00	62.90	40.00	0.50	1.85	1.43	0.003	0.12	11.64	99.843
25-26	22.54	4.57	50.25	35.12	6.49	1.89	1.80	0.002	0.06	13.65	101.252
26-27	28.60	4.18	32.85	23.00	18.23	1.12	1.43	0.003	0.09	13.45	99.953
27-28	35.64	2.33	18.25	12.78	27.35	0.77	1.35	0.001	0.06	14.23	99.981
28-29	39.80	1.39	10.14	7.10	33.69	0.20	0.97	0.001	0.06	13.31	99.561

Manganese Ores

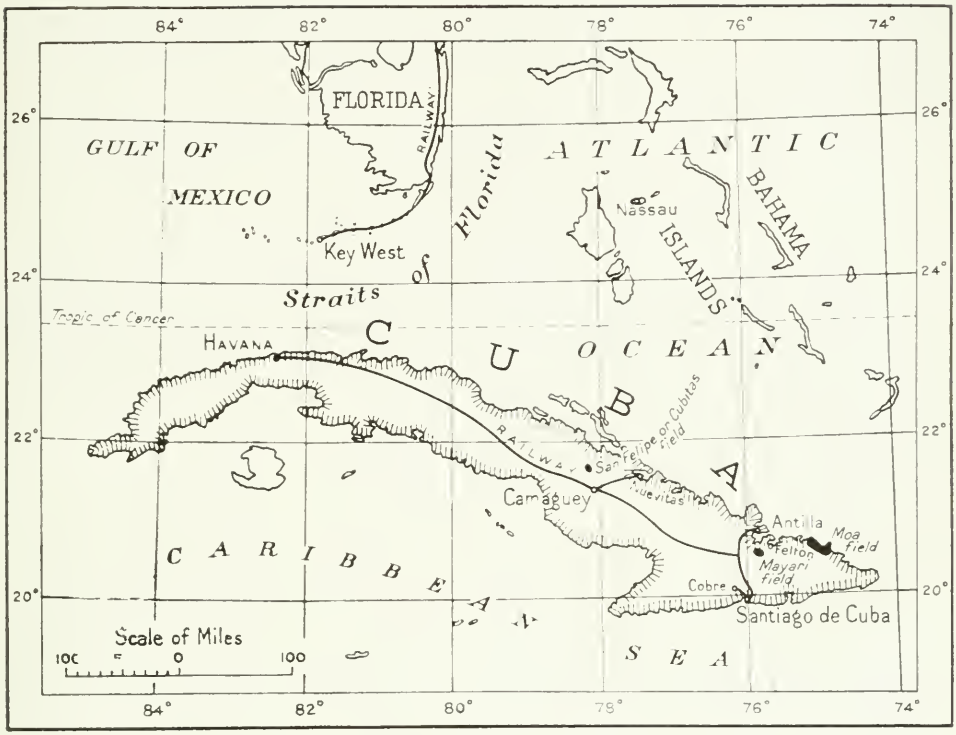
Lateritic manganese ores of India, although of much less importance than ores of the metal of other origin, are of much interest. Their mode of occurrence is similar to that of the cobalt ores of New Caledonia.

Fermor says: . . . . manganese, when present in laterite, usually renders itself conspicuous by segregating into forms, as a rule black nodules or veins of psilomelane or pyrolusite, that one would without any hesitation call manganese-ore. It rarely seems, except in very small quantity (or in proper manganese-ores), to become blended with the other constituents of laterite, so as to form intimate mixtures similar to those that the oxides of iron, aluminum, and titanium, so commonly form with one another. Indeed, many large masses of laterite can be found . . . . that seem to be completely free from manganese. As it cannot be supposed that the rocks from which the iron and alumina of the laterite were derived contained no manganese, it is necessary to suppose that with solutions containing manganese, iron, and aluminum, a selective precipitation can take place in nature.[3]

[1] The Mayari and Moa Iron-Ore Deposits of Cuba, A.I.M.E., Vol. XLII, pp. 109-115. Characteristics and Origin of the Brown Iron-Ores of Camaguey and Moa, Cuba, Ibid., pp. 116-137.

[2] Additional data on origin of Lateritic Iron Ores of Eastern Cuba, C. K. Leith and W. J. Mead, A.I.M.E., Vol. LIII, 1915, p. 76.

[3] Memoir, Geol. Surv. India, Vol. XXXVII, p. 381.



Map of Cuba.

The following table of analyses is taken from Fermor's report.[1]

TABLE No. 5

Analyses of Lateritic Manganese Ores

	Belgaum	Shimoga		Sandur
		Higher grade ores	Lower grade ores	
Manganese	31.2 –60.8	44–56	30–38	39.47–54.39
Iron	0.1 –18.4	2–10	10–20	5.38–19.40
Silica	0.6 – 2.5	1– 3	2– 6	0.43– 1.00
Phosphorus	0.01– 0.12	0.015–0.600	0.01– 0.6	0.016–0.033

[1] P. 389.

The situation as regards manganese, especially in the United States, is now serious, and is likely to continue so long as the war lasts. By far the most important producers of manganese ores are Southern Russia, British India and Brazil. As is the case of nickel, a very few countries supply the greater part of the world's requirements for manganese.

Aluminum Ores

That in India extensive deposits of bauxite, the chief ore of aluminum, are of lateritic origin is seen from the following:

Some years ago it was discovered that many of the lateritic deposits of India are highly aluminous, such aluminous varieties being identical with the substance known as bauxite. Field-work carried out since 1903 by the officers of the Geological Survey has revealed the existence of extensive deposits of this mineral substance in various parts of India, and chemical investigation in the Geological Survey Laboratory and at the Imperial Institute has shown that certain of the Indian bauxites compare very favourably with the Irish, French, and American bauxites placed on the English market. . . . Eight analyses of specimens and samples of the Balaghat bauxites have given results ranging between the following limits:—

Al_2O_3	51.62 to 58.83
Fe_2O_3	2.70 to 10.58
TiO_2	6.22 to 13.76
SiO_2	0.05 to 2.65
Combined water	22.76 to 30.72
Moisture	0.40 to 1.14

Corresponding to 71.2 to 80.8 per cent. of Al_2O_3 after calcination. With these may be compared the following figures showing the range of analysis of some Irish, French, and American bauxites of commerce analysed at the Imperial Institute:—

Al_2O_3	42 to 63
Fe_2O_3	2 to 21
TiO_2	2 to 6
SiO_2	3 to 13
H_2O	12 to 28
Moisture	5 to 16

Two Katni bauxites gave the following analyses:—

	No. 1	No. 2
Al_2O_3	65.48	52.67
Fe_2O_3	3.77	7.04
TiO_2	11.61	7.51
SiO_2	0.38	1.26
H_2O	19.38	29.83

From these figures it will be seen that the Balaghat and Jubbulpore bauxites are of very high grade. There seems also to be little doubt that large quantities of the mineral are available, and the commercial feasibility of making use of these deposits has consequently been under investigation for some years.[1]

While not dealing specifically with the character or origin of laterites, W. J. Mead[2] in his paper on the "Occurrence and Origin of the Bauxite Deposits of Arkansas," furnishes data that make the attempt to define and classify laterites still more difficult. It will be seen from the following notes from Mead's paper that the bauxite is a product of weathering of nephelene syenite. Moreover, the analyses show that the upper layers of the deposits, formed in situ, are to be

[1] Records Geol. Surv. of India, Vol. XLVI, 1915, pp. 228, 229.
[2] Ec. Geology, 1915, pp. 28-54.

classified as clays, while lower layers, with their high content of bauxite and low percentage of silica, according to the definitions proposed by most writers, are to be classed as laterites. These bauxite-holding deposits, therefore, considered as a whole, cannot be classed as either laterite or clay.

Mead says: It appears that normal weathering of the syenite to kaolin and allied minerals has simply continued one step further in breaking down these hydrous aluminum silicates to hydrous aluminum oxide.

Downward Secondary Enrichment of Alumina

The top portion of the bauxite deposits is characteristically higher in silica than the bauxite below. In many instances it has been necessary to remove the upper eighteen inches or two feet of high silica ore before mining, thus adding greatly to the mining cost. A typical instance is shown in the following table of analyses of a series of samples from a test pit in bauxite.

TABLE No. 6

Marked.	SiO_2	Fe_2O_3	TiO_2	Loss on ignition.	Al_2O_3 by Diff.
3′– 5′	24.85	4.84	1.3	22.97	46.04
5′– 8′	13.54	3.14	1.5	27.52	54.30
7′– 9′	14.63	3.24	1.5	28.22	52.41
9′–11′	7.73	2.63	1.3	30.36	57.98
11′–13′	9.96	3.19	1.4	29.04	56.41
13′–15′	9.65	1.59	1.7	29.89	57.16
15′–17′	9.00	2.99	1.6	29.56	56.76
17′–19′	13.29	2.32	1.8	27.69	54.90
19′–21′	11.88	2.11	1.8	28.44	55.77
21′–23′	7.08	2.57	2.0	30.25	58.09
23′–25′	6.84	2.02	1.7	29.91	59.53
25′–27′	7.33	3.04	1.7	30.63	57.30
27′–29′	5.52	2.16	2.8	30.69	58.83
29′–31′	5.70	2.11	1.9	30.53	59.76

This increase in silica toward the surface may be due to an actual downward secondary concentration of alumina. Those portions of kaolin and halloysite which persist after the main portion of the kaolinized syenite has been altered to bauxite are the dense impervious parts. Bauxite is soluble in surface solution to a certain extent, and on being dissolved and carried downward leaves the kaolin and hence the silica in relatively higher percentage at the surface. The alumina carried down is deposited below, assisting in the formation of the pisolites.

Various writers on the geology of India have shown the wide distribution of bauxite in that country and have emphasized the fact that bauxite is a variety of laterite. That the deposits of Arkansas are of great importance is shown by the fact that over 80 per cent. of the large production of bauxite in the United States, during the five years up to 1915, came from that State.

Gold Ores

Among the most interesting descriptions of lateritic gold deposits are those of British Guiana by J. B. Harrison.[1] The following quotations from this author show the character of the deposits.

[1] The Geology of the Goldfields of British Guiana, 1908.

The diabase intrusions occur in belts, generally stretching across the colony in a northwesterly and south-easterly direction. The intrusions vary from narrow dykes, only exposed in the courses of the rivers during very dry seasons, some being not more than from two to three feet across, to low hills and to mountain ranges, some of which—for example, the Eagle mountains in the Potaro gold district—exceed in height two thousand feet. The tops and sides of the hills and mountains, except where they have suffered great denudation, are covered with ironstone gravel, while the lower parts of the districts in which diabase forms the country are covered up with strata of laterite, frequently over one hundred feet in depth, and in places interspersed with nests of secondary quartz, or traversed by veins and stringers of quartz, or, less often, by lenticular layers of secondary quartz, closely resembling, when cut through by mining shafts, tunnels and trenches, true quartz-reefs. The quartz rock in all these forms is not unfrequently auriferous, the metal being dispersed through it in a very irregular manner, especially in the larger lenticular layers, which in many parts are nearly or even entirely, barren of gold, and in others are "bonanzas" carrying at rates from twenty to, in places, several hundreds of ounces of the precious metal to the ton of the rock. Unfortunately hitherto these bonanzas have proved few and far between; but there is no reason for assuming that they will not be found in many places in the enormous area of the laterite deposits which up to the present has not been prospected, as they have been in similar places at intervals in the past. Gold also occurs as paint gold, as gold dust, and as nuggets of varying sizes in the laterite.[1]

No quartz veins occur in the diabase, whilst in the unaltered epidiorite and hornblende-schist only, as a rule, narrow veins and stringers of quartz are found. But veins and lenticular masses of quartz which are, not unfrequently, rich in gold are of common occurrence in the decomposition-products of the epidiorite, hornblende-schist and diabase.[2]

Where the country rock traversed by these veins has decomposed to a great depth their size has been largely increased, having been added to by silica dissolved from the decomposing rocks by percolating waters. At the same time as silica was thus deposited a concentration and deposition of the gold contained in the decomposing rocks took place, and thus the quartz veins became enriched in this metal in proportions varying with those present in the country rock, with the result that the veins found in decomposed epidiorite and hornblende-schist are, as a rule, richer in gold than are those found in decomposed acidic rocks.[3]

The veins of quartz which traverse the dark-red decomposition-products of the basic rocks are frequently very rich in gold at and near their outcrops, these parts being far more auriferous than are the remaining portions of the veins. Similarly the talcose selvages of these veins are often highly auriferous.[4]

[1] The Geology of the Goldfields of British Guiana, 1908, pp. 22, 23.

[2] Ibid., p. 186.

[3] Ibid., pp. 186, 187.

[4] Ibid., p. 187.

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ANNUAL REPORT

OF THE

Inspector of Division Courts

FOR THE

PROVINCE OF ONTARIO

FOR THE YEAR

1916

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1917

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

TORONTO, March 1st, 1917.

To His Honour SIR JOHN STRATHEARN HENDRIE, K.C.M.G., C.V.O., etc., a Colonel in the Militia of Canada,

Lieutenant-Governor of Ontario.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present to Your Honour the Report of the Inspector of Division Courts, of the Province of Ontario, for the year ending 31st December, 1916.

Respectfully submitted,

I. B. LUCAS,

Attorney-General.

Toronto, March 1st, 1917.

Sir,—I have the honour to submit herewith, to be presented to His Honour the Lieutenant-Governor, the Report of the Inspector of Division Courts, for the year ending 31st December, 1916.

I have the honour to be, Sir

Your obedient servant,

J. B. Macdonald,

Inspector.

To the Honourable I. B. Lucas, K.C., M.P.P.,
Attorney-General, Toronto.

Annual Report of the

INSPECTOR OF DIVISION COURTS

For the Province of Ontario

FOR THE YEAR ENDING 31st DECEMBER, 1916.

TORONTO, March 1st, 1917.

To His Honour SIR JOHN STRATHEARN HENDRIE, K.C.M.G., C.V.O., etc., a Colonel in the Militia of Canada,

Lieutenant-Governor of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the honour to present the Annual Report of the business of the Division Courts of the Province of Ontario for the year ending 31st December, 1916, including a list of officials, a description of the limits of boundaries of the divisions in each county and district, and the Tariff of Fees.

The volume of business in the Courts has materially decreased during the year 1916, as compared with that of 1915, as shown by the following comparison of figures.

Suits entered exclusive of transcripts of judgments and judgment summonses,

For the year 1915	68,384
" " 1916	59,051
a decrease of	9,333

The amount of claims entered exclusive of transcripts of judgments and judgment summonses,

For the year 1915	$2,719,166 93
" " 1916	2,436,776 48
a decrease of	$282,390 45

The amount of suitors' moneys

Paid into court, 1915	$1,045,554 95
" " 1916	1,002,293 87
a decrease of	43,260 08

The amount of suitors' moneys

Paid out of court, 1915	$1,039,988 59
" " 1916	992,901 23
a decrease of	47,087 36

In the Northern part of the County of Frontenac, (Sixth Division) it was found that the Public were much inconvenienced by having to travel a long way to attend sittings of the court, which were held at Sharbot Lake.

A meeting of the Division Court Board was held at Kingston to consider the situation, and it was arranged that two sittings of court be held each year at the Village of Plevna, in the months of May and November, respectively. This arrangement will meet the requirements of the people, there being a resident bailiff at this point. The Fourth Division Court of the District of Muskoka, at Port Carling, has been abolished and the territory added to the First Division Court, Bracebridge. The Sixth and Seventh Divisions of the County of Ontario have also been changed as shown in the description of the boundaries of Divisions.

The following changes in the Division Courts Act were enacted during the last Session of the Legislature:

An Act to amend The Division Courts Act.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Rev. Stat. c. 63, s. 15, subs. 3, amended.

1. Subsection 3 of section 15 of *The Division Courts Act* is amended by adding thereto the following words, "and the costs of such advertisement shall be paid for by the county."

Rev. Stat. 3. 63, s. 26, repealed.

2. Section 26 of *The Division Courts Act* is repealed and the following substituted therefor:—

Security by Clerks and Bailiffs.

26.—(1) Every Clerk and Bailiff shall furnish such security as may be required by the Lieutenant-Governor in Council for the due performance of the duties of his office, and, subject to section 33, the provisions of *The Public Officers Act,* relating to the giving of security, shall apply to such security.

Rev. Stat. c. 15.

Security to inure to benefit of person injured.

(2) Such security shall enure to the benefit of any person suffering damages by the default, breach of duty or misconduct of the Clerk or Bailiff.

Rev. Stat. c. 63, s. 33, repealed.

3. Section 33 of *The Division Courts Act* is hereby repealed and the following subsituted therefore:—

Agreements with Fidelity Company. as to security for Clerks and Bailiffs.

33. The Lieutenant-Governor in Council may authorize the Inspector to enter into agreements in His Majesty's name with any Corporation authorized to carry on the business of fidelity insurance in Ontario, for the furnishing of the security required by section 26, and may also make regulations regarding the same.

Rev. Stat. c. 63, ss. 27, 28, 29, 31, 32, 57 and 58, repealed.

4. Sections 27, 28, 29, 31, 32, 57 and 58 of *The Division Courts Act* are hereby repealed.

Rev. Stat. c. 63, s. 43, sub. (3), amended.

5. Subsection 3 of section 43 of *The Division Courts Act* is amended by striking out the words "to the Clerk of the Peace of this county to be paid over" in the third and fourth lines thereof.

6. Section 56 of *The Division Courts Act* is amended by striking out all words after the word "address" in the third line thereof. Rev. Stat. c. 63, s. 56, amended.

7. Subsection 1 of section 128 of *The Division Courts Act* is amended by inserting before the words "The Appellant" in the first line, the words "subject to the Consolidated Rules of Practice of the Supreme Court." Rev. Stat. c. 63, s. 128, ss. 1, amended. Procedure on appeals.

Subsequently an Order-in-Council was passed as follows:—

Extract from an Order-in-Council which was passed on the 8th May, 1916, regarding security for Division Court Clerks and Bailiffs which provides:—

1. That the Inspector of Division Courts be authorized to enter into an agreement ..... with such Guarantee Company or Companies as he may deem proper, for the furnishing of the security required to be given by the Clerks and Bailiffs of Division Courts.

2. That the amount of security to be given by Clerks and Bailiffs of Division Courts shall be fixed each year and shall be as follows:

Where the average gross fees for the past three years have been:—

Under $200	$800
$200 and under $300	1,000
300 and under 500	1,500
500 and under 1,000	2,000
1,000 and under 1,500	2,500
1,500 and under 2,000	3,000
2,000 and under 3,000	3,500
3,000 and under 4,000	4,000
4,000 and under 6,000	5,000
6,000 and under 8,000	7,000
8,000 and under 10,000	9,000
Over $10,000	10,000

3. That all premiums shall in the first instance be payable by the Treasurer of Ontario out of the funds of the Province.

5. That each Clerk or Bailiff the amount of whose bond is over $1,000 shall refund to the Government the amount of the premium paid on his account. But Clerks and Bailiffs the amount of whose bond does not exceed $1,000 shall not be required to refund any of the premium paid on their account, but the same shall be paid out of the funds of the Province.

6. That it shall be the duty of the Inspector to see that the amount of the premiums paid on behalf of Clerks and Bailiffs be refunded by them to the Government as above provided.

7. *That in default of a refund being made by any Clerk or Bailiff within one month of notice having been given him by the Inspector that the same is due, the Inspector shall forthwith suspend* such Clerk or Bailiff.

8. That upon security being given as above provided any security now held with respect to any Clerk or Bailiff of Division Courts may be cancelled as regards any acts, defaults or omissions of such Clerk or Bailiff subsequent to the perfecting of the new security.

This went into effect on the 1st day of June, and is working very well, in the interests of all concerned.

Those who are required to make a refund of the premium to the Government are benefited by the fact, that the rate per $100 has been reduced from 40 cents as formerly, to 30 cents per $100 per annum.

Three hundred and ten offices had been inspected up to the 31st December, and a careful audit made of the business of each, the results of which are on file in the Inspector's office.

On the whole, the business of the Division Courts, throughout the Province, is in a very satisfactory condition, as evidenced by the numerous letters received from litigants, who have had dealings with the courts.

No loss has been sustained by the Guarantee Companies since the new method of bonding was inaugurated, and under the careful system of inspection and audit, every protection is being afforded them.

Many changes have taken place amongst the officials of the courts, through death, resignation and enlistment. Their places have been filled by appointments, the latter by Deputies who act temporarily, until the return of the regular incumbents.

All of which is respectfully submitted.

I have the honour to be,

Your Honour's obedient servant,

J. B. Macdonald,

Inspector.

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Algoma	1	767	35 381 36	28	1,654 62	16	769 53	14,930 27	14,598 47	1,101 33	631
	2	46	1,830 55	5	265 36	6	.....	1,588 82	1,588 82	.....	39
	3	126	4,734 69	2	118 33	.....	252 90	1,955 04	1,942 09	12 95	94
	6	46	2,652 89	1	39 14	1	23 15	695 12	718 27	.....	37
	7	177	5,770 20	10	362 75	3	114 47	2,479 94	2,413 44	66 50	136
Brant.....	1	957	39,661 32	61	3,293 40	48	269 93	15,895 98	15,902 25	263 66	884
	2	101	3,599 39	10	717 54	4	.....	1,839 17	1,837 17	2 00	96
	3	41	1,372 76	1	10 00	1	.....	630 27	616 27	11 00	38
	4	48	1,213 42	3	128 38	7	26 00	833 16	833 16	26 00	47
	5	21	1,172 90	5	300 18	2	1 00	768 48	765 48	3 00	18
Bruce.....	1	91	3,279 89	6	345 76	8	.....	1,638 82	1,638 32	.....	85
	2	61	2,722 88	8	415 51	7	.....	1,318 18	1,318 18	.....	52
	3	33	989 70	1	42 57	2	.....	451 15	451 15	.....	30
	4	36	1,447 13	1	.....	.....	.....	526 79	566 79	.....	32
	5	47	1,714 48	6	466 99	1	.....	1,454 71	1,419 71	35 00	44
	6	Vacant	.....	.....	.....	.....	.....	.....	.....	.....	.....
	7	39	818 20	4	169 97	.....	.....	356 36	356 36	.....	39
	8	274	7,652 30	19	928 74	3	162 67	3,056 24	3,057 31	159 60	259
	9	40	1,304 43	8	293 18	.....	.....	579 84	579 84	.....	37
	10	52	2,467 32	3	213 67	.....	.....	159 64	159 64	.....	30
	11	44	1,567 14	2	273 85	2	.....	630 03	630 03	.....	26
	12	63	2,311 85	9	308 28	11	.....	292 61	292 61	.....	60
Carleton	1	2,644	168,340 16	46	2,871 63	520	2,260 22	22,553 75	23,501 38	1,312 59	2,303
	2	42	2,196 51	1	28 12	1	.....	1,664 68	1,664 68	.....	38
	3	36	2,529 15	9	718 36	4	.....	1,868 26	1,201 00	667 26	25
	4	24	1,348 23	6	296 25	1	.....	672 45	672 45	.....	20
	5	14	641 11	2	222 35	.....	.....	600 57	600 57	.....	13
	6	42	1,926 91	2	82 99	1	163 56	1,059 41	963 48	95 93	39
	7	354	10,045 85	25	1,617 55	42	188 10	3,957 11	4,145 21	.....	336
Dufferin.....	1	130	5,255 92	1	8 78	8	8 83	2,775 60	2,773 34	2 26	106
	2	107	5,120 44	6	297 52	21	.....	1,308 95	1,308 95	.....	95
	3	7	104 07	5	445 92	.....	.....	228 75	228 75	.....	7
	4	3	108 81	.....	.....	.....	.....	108 87	108 87	.....	3
	5	39	1,778 84	5	195 02	2	.....	721 68	721 68	.....	36
Elgin	1	230	11,699 66	29	1,364 96	21	38 83	4,755 81	4,755 81	38 83	203
	2	22	1,539 56	5	388 76	2	.....	720 53	720 53	.....	17
	3	896	30,277 15	28	1,664 52	47	5 57	13,651 03	13,631 03	24 57	846
	4	106	5,199 57	12	709 92	11	282 21	2,866 18	2,840 27	25 91	93
Essex.....	1	23	951 40	.....	.....	8	27 83	376 54	353 54	23 00	22
	2	79	3,159 88	3	186 24	7	5 00	520 27	511 77	13 50	57
	3	56	3,134 41	5	336 76	7	....	1,183 42	1,183 42	.....	48
	4	78	1,862 99	5	349 34	13	4 50	1,210 92	1,203 98	11 44	89
	5	252	8,337 19	6	323 92	15	7 00	3,288 53	3,265 78	29 75	235
	6	24	1,622 18	10	556 34	1	.....	454 11	366 10	88 01	18
	7	735	38,786 15	58	2,495 50	245	11 26	11,976 70	11,889 74	86 26	309
	8	167	7,345 18	13	846 79	21	161 00	3,586 74	3,299 60	448 14	156
	9	66	2,553 65	4	142 43	.....	81 13	1,503 57	1,539 57	45 13	60
	10	9	131 76	3	185 34	.....	....	463 35	463 35	.....	7

A.

to the 31st day of December, A.D. 1916, inclusive, shewing:

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of Judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of section 43 D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
57	.....	.....	1	79	.....	.....	....	.....	.....	1	10 00	.....	....	1,962 54	990 00	.....
5	.....	.....	.....	7	.....	.....	....	.....	.....	.....	.....	.....	....	71 50	.....	.....
7	.....	.....	.....	25	.....	.....	....	.....	.....	1	10 00	.....	....	201 50	214 51	.....
9	.....	.....	.....	5	.....	.....	....	.....	.....	.....	.....	.....	....	126 89	103 08	.....
3	.....	.....	.....	38	.....	.....	....	.....	.....	.....	.....	2	....	343 97	190 65	.....
73	8	1	2	189	.....	.....	....	37 99	82 19	5	35 00	7	....	2,410 95	1,084 16	.....
4	.....	.....	.....	22	.....	.....	....	3 08	.....	.....	.....	.....	....	260 35	159 79	.....
3	.....	.....	.....	12	.....	.....	....	1 38	.....	.....	.....	.....	....	83 15	40 10	.....
1	2	.....	1	13	1	11 00	....	91	.....	1	10 00	.....	....	120 10	66 95	.....
3	.....	.....	.....	1	1	15 00	....	1 35	.....	.....	.....	.....	....	77 50	58 20	.....
6	1	.....	.....	19	.....	.....	....	3 03	.....	.....	.....	1	....	182 68	195 50	.....
9	.....	.....	.....	13	2	17 70	....	3 51	.....	.....	.....	.....	....	214 47	164 53	.....
3	.....	.....	.....	9	.....	.....	....	86	.....	.....	.....	.....	....	81 11	54 35	.....
4	.....	.....	.....	5	.....	16 40	....	1 78	.....	.....	.....	.....	....	87 75	69 01	.....
3	.....	.....	.....	12	1	17 10	....	1 50	.....	.....	.....	.....	....	107 29	97 50	.....
.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	.....	28 08	.....
.....	.....	.....	.....	14	.....	.....	....	57	.....	.....	.....	.....	....	90 30	73 50	.....
15	.....	.....	.....	97	.....	.....	....	7 11	.....	.....	.....	.....	....	627 20	429 95	.....
1	.....	.....	.....	18	.....	.....	....	1 14	.....	.....	.....	.....	....	83 62	.....	.....
7	.....	.....	.....	16	.....	.....	....	2 59	.....	.....	.....	.....	....	109 64	.....	.....
4	.....	.....	.....	14	1	15 40	....	1 51	.....	.....	.....	.....	....	100 66	56 00	.....
3	.....	.....	.....	10	.....	.....	....	1 64	.....	.....	.....	.....	....	220 35	.....	.....
203	.....	.....	10	488	.....	.....	....	135 14	1,144 42	11	76 00	186	7	6,236 05	{ 2,320 11 { 2,833 23	6 79
4	.....	.....	.....	3	.....	.....	....	2 02	.....	.....	.....	.....	....	139 15	238 74	.....
5	.....	.....	.....	5	.....	.....	....	2 43	.....	.....	.....	1	....	112 23	105 48	.....
4	.....	.....	.....	3	1	12 25	....	1 60	.....	.....	.....	.....	....	98 85	76 68	.....
1	.....	.....	.....	2	.....	.....	....	58	.....	.....	.....	.....	....	55 50	113 46	.....
3	.....	.....	.....	5	.....	.....	....	1 80	.....	.....	.....	.....	....	105 90	97 87	.....
18	.....	.....	1	110	.....	.....	....	9 03	.....	1	5 00	23	....	941 35	798 48	.....
11	.....	.....	.....	31	1	19 40	....	5 88	.....	1	8 00	.....	....	323 75	182 52	.....
11	.....	.....	.....	13	.....	.....	....	4 60	.....	2	18 00	8	1	259 25	147 00	.....
.....	.....	.....	.....	2	.....	.....	....	06	.....	.....	.....	.....	....	27 03	32 40	.....
.....	.....	.....	.....	9	.....	.....	....	09	.....	.....	.....	.....	....	3 45	7 80	.....
5	.....	.....	.....	7	.....	.....	....	2 03	.....	1	8 00	.....	....	92 40	86 40	.....
27	3	.....	.....	39	2	21 00	....	11 66	.....	1	10 00	6	....	700 45	508 90	.....
5	1	.....	.....	.....	.....	.....	....	1 76	.....	.....	.....	.....	....	74 05	84 87	.....
50	3	.....	1	239	.....	.....	....	26 87	.....	2	14 00	10	....	1,946 45	1,574 57	.....
13	.....	.....	.....	12	1	10 50	....	5 66	.....	.....	.....	.....	....	257 20	358 15	.....
1	.....	.....	.....	4	.....	.....	....	87	.....	.....	.....	3	....	65 45	120 30	.....
5	.....	.....	4	15	.....	.....	....	2 90	.....	.....	.....	.....	....	200 95	.....	.....
8	.....	.....	.....	7	1	11 50	....	3 35	.....	1	10 00	1	....	185 20	81 90	.....
2	1	.....	1	18	.....	.....	....	2 03	.....	.....	.....	4	....	239 25	129 26	.....
15	1	.....	.....	89	.....	.....	....	8 03	.....	1	8 00	4	....	615 40	360 92	.....
4	2	.....	.....	2	.....	.....	....	1 75	.....	.....	.....	.....	....	93 25	.....	.....
30	20	10	42	376	2	24 00	....	19 77	.....	10	75 00	20	4	1,987 91	1,736 06	.....
11	.....	.....	.....	20	.....	.....	....	6 89	.....	.....	.....	4	....	462 25	304 07	.....
6	.....	.....	.....	19	.....	.....	....	2 55	.....	.....	.....	1	....	134 45	98 70	.....
2	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	34 64	43 00	.....

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c		$ c.		$ c.	$ c.	$ c.	$ c.	
Frontenac	1	866	28,881 70	28	1,722 30	123	438 87	13,930 04	14,146 00	222 91	825
	2	13	429 00	1	46 84	3	61 06	101 10	142 16	20 00	12
	3	46	1,705 34	13	.....	6	.....	1,139 97	1,107 71	32 26	35
	4	59	2,533 13	8	386 26	5	.....	1,472 44	1,472 44	.....	57
	5	No	business	.....	.....	.....	.....	.....	.....	.....	.....
	6	104	4,383 58	26	985 78	7	18 00	3,168 50	3,186 50	....	97
	7	37	1,825 57	3	151 56	4	.....	484 61	484 61	.....	33
Grey	1	400	12,351 61	17	752 37	33	39 73	6,303 35	6,196 06	107 29	378
	2	49	2,566 39	17	1,016 46	10	.....	1,328 62	1,282 37	46 25	34
	3	117	5,551 58	4	.....	12	163 36	2,377 41	2,377 41	163 36	105
	4	88	3,827 55	16	1,227 08	1	20 15	2,064 21	2,064 21	.....	65
	5	107	3,631 15	4	286 33	4	350 49	1,539 52	1,737 01	153 00	101
	6	21	685 08	3	83 84	2	1 00	519 01	519 01	1 00	22
	7	115	3,869 29	12	417 57	15	195 49	1,480 94	1,567 91	108 52	123
	8	69	2,593 74	17	716 31	11	120 80	1,902 91	1,941 52	82 19	57
Haldimand	1	54	3,036 40	11	746 80	10	164 49	1,020 56	1,088 38	96 18	57
	2	76	2,421 76	4	176 65	12	122 15	1,337 92	1,405 04	55 03	72
	3	157	5,734 00	8	506 46	27	490 81	1,791 42	1,924 26	357 97	142
	4	104	4,397 00	10	681 00	18	129 15	2,463 50	2,529 65	62 77	85
	5	12	1,015 75	2	275 27	1	.....	499 16	499 16	.....	7
Haliburton	1	36	1,756 23	8	377 14	.....	1,415 42	1,415 42	.....	32 04	.....
	2	29	1,179 07	7	852 03	2	334 65	344 65	.....	20 02	.....
	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	4	No	business	.....	.....	.....	.....	.....	.....	.....	.....
Halton	1	55	2,417 22	11	336 15	14	221 76	930 16	954 12	197 29	51
	2	53	2,246 76	11	784 45	9	57 15	1,036 63	1,048 78	45 00	50
	3	87	2,926 80	7	645 95	6	87 03	1,565 44	1,460 00	185 27	83
	4	58	1,970 42	11	483 50	8	37 35	1,696 35	1,605 40	128 30	54
	5	27	782 57	3	234 50	3	.....	559 09	559 09	.....	28
	6	146	3,565 94	44	1,889 73	7	31 98	1,524 53	1,342 81	213 70	143
Hastings	1	547	17,819 42	28	2,023 57	65	452 58	9,568 51	9,435 61	585 48	355
	2	29	1,037 64	2	82 35	2	59 01	434 77	358 54	135 24	26
	3	8	328 42	2	42 08	.....	.....	.....	.....	.....	1
	4	94	2,713 97	6	282 51	4	153 85	685 63	1,816 87	22 61	90
	5	113	3,935 57	9	967 44	3	28 05	2,617 60	2,624 75	20 90	104
	6	90	3,617 25	7	510 97	.....	6 90	1,872 95	1,853 30	19 65	81
	7	28	446 00	.....	.....	.....	.....	346 30	346 30	.....	27
	9	293	8,418 17	17	1,212 05	31	14 84	5,311 65	5,177 09	149 40	186
	10	91	3,136 44	1	11 20	2	103 77	1,581 30	1,538 70	42 50	89
	11	37	1,106 62	4	207 91	4	108 97	1,047 08	1,152 42	3 63	43
	12	109	3,455 62	8	296 69	7	26 35	1,423 61	1,418 46	31 50	104
Huron	1	124	3,981 39	18	963 22	10	33 60	2,074 81	2,041 64	66 77	116
	2	84	3,477 81	4	252 31	9	66 86	2,250 17	2,169 90	156 13	73
	3	49	1,803 77	4	55 38	1	.....	554 00	554 00	.....	49
	4	52	2,164 06	10	439 14	2	7 36	1,763 60	1,765 96	5 00	48
	5	77	3,217 32	5	352 74	8	2 00	1,220 56	1,222 56	.....	71
	6	24	586 40	7	246 85	.....	.....	365 55	365 55	.....	24
	7	13	794 28	.....	.....	.....	.....	251 78	251 78	.....	11
	8	113	3,792 63	6	273 48	13	91 37	1,564 15	1,646 71	9 01	104
	9	45	1,288 70	9	582 20	1	.....	1,302 62	1,302 62	.....	44
	10	65	2,788 97	3	259 54	6	40 00	1,432 39	1,410 45	78 94	57
	11	20	1,346 66	1	44 91	1	25 10	1,164 68	1,189 78	.....	17
	12	35	1,123 13	3	.....	1	16 20	835 28	853 78	2 25	33

A.—Continued.

to the 31st day of December, A.D. 1916, inclusive, etc.—Continued.

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of section 43, D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
41	.....	.....	1	208	.....	.....	....	25 79	4 50	3	20 00	23	0	2,022 50	1,133 40	.....
1	.....	1	.....	2	.....	.....	....	43	.....	.....	.....	2	....	26 85	.....	.....
11	.....	.....	.....	15	.....	.....	....	.....	.....	.....	.....	.....	....	84 16	110 88	.....
3	.....	.....	1	8	.....	.....	....	1 86	.....	1	2 00	.....	....	160 95	198 92	.....
.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	.....	40 65	.....
6	.....	.....	.....	10	.....	.....	....	4 02	.....	.....	.....	2	....	330 25	{ 181 26	.....
															{ 62 75	
2	.....	.....	.....	6	.....	.....	....	1 62	.....	.....	.....	.....	....	103 56	82 85	.....
22	.....	.....	.....	119	.....	.....	....	9 81	.....	1	5 00	1	....	1,062 75	655 93	.....
8	.....	.....	.....	7	.....	.....	....	2 96	.....	.....	.....	.....	....	206 50	190 70	.....
11	1	.....	.....	30	.....	.....	....	4 55	.....	.....	.....	1	....	258 25	180 18	.....
18	.....	.....	.....	18	.....	.....	....	6 16	.....	2	10 00	.....	....	383 52	394 54	.....
6	2	.....	.....	28	1	17 10	....	3 08	.....	.....	.....	.....	....	238 75	306 44	.....
2	.....	.....	.....	12	.....	.....	....	83	.....	.....	.....	.....	....	49 16	95 65	.....
7	.....	.....	.....	32	1	17 10	....	3 61	.....	1	5 00	2	....	253 55	193 25	.....
7	.....	.....	.....	11	.....	.....	....	2 77	.....	.....	.....	.....	....	230 70	144 10	.....
7	1	.....	.....	7	.....	.....	....	2 82	.....	.....	.....	1	....	187 15	84 00	12 00
4	.....	.....	.....	.....	.....	.....	....	1 93	.....	.....	.....	.....	....	106 45	.....	.....
13	1	.....	.....	44	.....	.....	....	5 52	.....	3	25 00	12	....	392 05	220 96	2 00
7	5	.....	.....	19	1	11 00	....	4 27	.....	.....	.....	.....	....	327 20	276 25	.....
4	.....	.....	.....	2	.....	.....	....	1 46	.....	.....	.....	.....	....	43 73	74 48	.....
.....	.....	.....	.....	1	.....	.....	....	1 93	.....	1	5 00	1	....	95 78	.....	.....
.....	.....	.....	.....	7	.....	.....	....	1 10	.....	.....	.....	.....	....	84 21	30 55	.....
.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	.....	.....	.....
4	.....	.....	.....	10	.....	.....	....	2 29	.....	2	20 00	.....	....	204 35	64 97	1 00
3	.....	.....	.....	13	.....	.....	....	1 98	.....	.....	.....	.....	....	157 60	11 45	.....
4	.....	.....	.....	.....	.....	.....	....	2 59	.....	.....	.....	1	....	230 00	.....	.....
4	.....	.....	.....	14	.....	.....	....	1 37	.....	.....	.....	.....	....	195 60	97 61	.....
2	.....	.....	.....	8	.....	.....	....	79	.....	.....	.....	.....	....	72 45	74 48	.....
3	1	.....	.....	70	.....	.....	....	1 95	.....	.....	.....	.....	....	291 30	198 75	.....
27	4	.....	.....	165	.....	.....	....	15 90	.....	.....	.....	7	2	1,545 70	{ 114 90	.....
															{ 880 96	
2	.....	.....	.....	.....	.....	.....	....	05	.....	.....	.....	.....	....	89 51	111 38	.....
1	.....	.....	.....	.....	.....	.....	....	43	.....	.....	.....	.....	....	11 18	.....	.....
4	2	.....	.....	21	.....	.....	....	2 50	.....	.....	.....	1	....	233 30	197 00	.....
9	.....	.....	.....	41	.....	.....	....	4 12	.....	.....	.....	.....	....	253 44	261 74	.....
9	.....	.....	.....	22	.....	.....	....	3 85	.....	.....	.....	.....	....	175 00	176 32	.....
1	.....	.....	.....	7	.....	.....	....	1 12	.....	.....	.....	.....	....	33 60	.....	.....
10	.....	.....	.....	97	1	13 60	....	6 85	.....	1	10 00	1	....	836 10	515 72	.....
2	.....	.....	.....	20	.....	.....	....	.....	.....	.....	.....	.....	....	186 93	166 37	.....
2	.....	.....	.....	12	.....	.....	....	1 22	.....	.....	.....	.....	....	.....	76 30	.....
4	.....	.....	1	37	.....	.....	....	2 81	.....	.....	.....	.....	....	262 75	.....	.....
7	.....	.....	.....	41	.....	.....	....	3 64	.....	1	5 00	.....	....	335 58	147 25	.....
11	.....	.....	.....	23	1	.....	....	4 04	.....	.....	.....	1	....	188 40	.....	35 64
1	.....	.....	.....	6	.....	.....	....	1 54	.....	.....	.....	.....	....	109 50	49 17	.....
4	.....	.....	.....	9	.....	.....	....	2 44	.....	.....	.....	.....	....	165 83	119 15	.....
4	.....	.....	.....	15	.....	.....	....	2 85	.....	.....	.....	.....	....	197 50	104 50	.....
.....	.....	.....	.....	7	.....	.....	....	33	.....	.....	.....	.....	....	49 45	47 85	.....
2	.....	.....	.....	2	.....	.....	....	49	.....	.....	.....	.....	....	19 95	18 40	.....
7	.....	.....	.....	32	.....	.....	....	3 28	.....	.....	.....	.....	....	265 65	236 84	.....
1	.....	.....	.....	13	.....	.....	....	1 00	.....	.....	.....	.....	....	72 70	132 90	.....
9	.....	.....	3	15	.....	.....	....	3 09	.....	.....	.....	.....	....	144 10	134 50	.....
2	.....	.....	.....	.....	.....	.....	....	1 54	.....	.....	.....	.....	....	54 90	41 63	.....
2	.....	.....	.....	9	.....	.....	....	.....	.....	.....	.....	.....	....	87 53	47 65	.....

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Kenora	1	249	9,857 38	2	99 25	3	543 48	4,727 71	4,440 48	830 71	180
	2	6	264 02	.....	.....	1	.....	90 60	90 60	.....	5
	3	28	833 55	4	304 13	1	.....	539 40	521 75	17 65	27
	4	10	978 51	2	.....	.....	135 45	1,004 93	993 93	146 45	13
Kent	1	798	33,297 00	36	1,981 72	77	492 90	12,441 64	11,006 69	1,927 85	689
	2	176	6,530 11	14	638 24	19	94 72	3,935 01	2,682 68	147 05	179
	3	94	2,568 85	4	142 70	16	212 06	1,686 49	1,877 14	51 41	108
	4	112	3,094 66	6	53 06	19	20 46	3,152 15	2,858 60	314 01	79
	5	294	6,921 16	8	322 24	2	426 65	4,229 25	4,361 90	294 06	288
	6	106	4,000 56	10	46 47	12	17 03	1,399 94	1,399 94	.....	96
	7	130	7,267 58	14	1,033 59	1	26 42	2,998 99	3,006 46	18 95	109
Lambton	1	767	32,694 14	23	1,634 13	72	296 22	15,895 19	15,884 75	306 66	691
	2	57	2,364 65	9	321 01	1	7 38	2,040 94	2,040 94	.....	52
	3	39	1,373 17	17	508 40	3	.....	1,399 59	1,399 59	.....	35
	4	31	1,416 79	9	17 59	3	52 96	1 106 49	1,113 25	46 00	28
	5	72	2,490 09	2	60 17	4	.....	1,382 60	1,382 60	.....	61
	6	35	1,328 97	1	.....	2	.....	922 74	922 74	.....	33
	7	Abolished									
	8	170	6,306 01	12	942 20	10	3 25	3,413 00	3,416 25	.....	145
	9	35	1,615 95	6	359 43	.....	23 71	1,543 59	1,538 48	28 22	30
Lanark	1	206	6,649 84	13	693 09	35	118 57	3,591 80	3,603 17	107 20	191
	2	50	1,989 84	3	156 29	6	.....	1,867 38	1,867 38	.....	34
	3	143	6 087 50	3	129 78	26	.....	1,573 60	1,573 60	.....	127
	4	431	13,751 62	11	831 89	11	24 37	6,476 16	6,500 53	.....	415
	5	91	3,367 50	5	492 46	16	.....	2,173 11	2,130 60	42 51	80
Leeds and Grenville	1	667	17 329 11	13	740 02	20	33 45	9,631 48	9,645 91	19 02	651
	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	3	93	4,122 53	16	697 80	13	3 47	1,574 24	1,559 48	14 76	89
	4	75	3,842 71	4	466 88	15	0 55	1,882 58	1,658 87	224 26	67
	5	56	2,149 45	3	263 12	4	.....	.....	.....	.....	50
	6	80	3,237 84	4	133 78	17	.....	1,839 66	1,839 66	.....	89
	7	4	262 75	.....	.....	.....	161 92	120 13	282 05	.....	3
	8	121	3,964 17	12	661 01	9	31 68	2,698 40	2,730 08	.....	113
	9	35	1,216 83	5	507 69	2	13 48	920 05	920 57	12 96	33
	10	28	1,451 91	6	521 96	2	.....	413 32	330 76	82 56	24
	11	15	582 62	.....	.....	1	.....	311 26	311 26	.....	15
	12	24	944 19	2	75 54	.....	.....	292 52	292 52	.....	22
Lennox and Addington	1	161	7,747 59	10	584 19	40	37 75	2,261 73	2,104 00	195 48	137
	2	16	365 68	3	216 47	7	13 17	568 67	581 84	.....	16
	3	6	82 45	.....	.....	.....	.....	91 00	91 00	.....	6
	4	13	594 47	5	238 49	3	31 56	175 51	162 51	44 56	11
	5	18	769 04	4	161 60	4	11 43	290 15	292 45	9 13	16
	6	30	715 90	.....	.....	2	22 22	689 13	684 13	5 00	17
	7	39	1,454 02	1	18 70	1	12 00	410 32	381 82	40 50	37
	8	20	650 72	2	231 65	.....	15 09	323 03	221 03	117 09	20
	9	9	483 50	.....	.....	.....	.....	483 50	483 50	.....	.....

A—Continued.

to the 31st day of December, A.D. 1916, inclusive, showing:

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of section 43, D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
14	.....	.....	.....	55	.....	.....	....	.....	.....	....	.....	.....	....	732 91	237 30	.....
1	3	.....	.....	.....	.....	.....	....	.....	.....	....	.....	.....	....	12 55	14 55	.....
.....	.....	.....	.....	6	.....	.....	....	.....	.....	....	.....	.....	....	54 20	68 90	.....
3	.....	.....	.....	1	.....	.....	....	.....	.....	....	.....	.....	....	52 58	100 00	.....
63	4	.....	.....	103	2	13 00	....	32 44	.....	2	20 00	21	1	1,766 98	462 23	.....
10	3	.....	.....	37	1	12 00	....	6 73	.....	.....	.....	5	....	492 50	351 60	.....
2	.....	.....	.....	30	.....	.....	....	2 54	.....	.....	.....	2	1	202 45	173 80	.....
2	1	1	.....	31	1	12 00	....	2 48	.....	.....	.....	1	....	293 60	233 19	.....
6	4	.....	.....	122	.....	.....	....	4 95	.....	.....	.....	3	....	558 30	391 44	40 69
6	2	.....	.....	34	.....	.....	....	3 58	.....	.....	.....	.....	....	244 15	256 37	.....
22	.....	.....	.....	16	.....	.....	....	8 08	.....	.....	.....	.....	....	342 40	.....	4 13
76	5	.....	.....	180	1	10 00	....	30 13	.....	2	10 00	16	....	1,618 49	846 20	.....
5	.....	.....	.....	12	.....	.....	....	2 09	.....	.....	.....	.....	....	152 15	177 17	.....
4	.....	.....	.....	13	.....	.....	....	1 48	.....	.....	.....	.....	....	119 45	150 07	.....
3	.....	.....	1	10	.....	.....	....	1 32	.....	1	10 00	.....	....	100 38	65 37	.....
3	.....	.....	1	23	.....	.....	....	.....	.....	.....	.....	1	....	116 30	115 00	.....
1	2	.....	.....	8	1	12 00	....	1 15	.....	.....	.....	.....	....	82 03	58 75	.....
14	.....	.....	1	45	.....	.....	....	6 41	.....	.....	.....	1	....	332 25	.....	.....
5	2	.....	.....	7	.....	.....	....	1 88	.....	.....	.....	.....	....	96 25	140 96	.....
11	.....	.....	.....	80	.....	.....	....	6 30	.....	1	5 00	20	1	647 40	{283 98 201 53	.....
6	.....	.....	.....	11	.....	.....	....	2 31	.....	.....	.....	2	....	154 45	177 15	.....
17	.....	.....	1	40	.....	.....	....	6 56	.....	.....	.....	7	....	380 60	165 21	.....
16	.....	.....	.....	120	.....	.....	....	11 20	.....	.....	.....	4	....	943 05	435 87	.....
11	1	.....	.....	25	.....	.....	....	3 98	.....	.....	.....	4	....	230 25	159 88	.....
30	1	.....	.....	266	.....	.....	....	17 40	.....	.....	.....	.....	....	1,440 90	{365 73 410 38	.....
.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	.....	135 35	.....
6	2	.....	.....	12	.....	.....	....	3 72	.....	.....	.....	.....	....	280 81	185 87	.....
9	.....	5	1	21	.....	.....	....	5 22	.....	.....	.....	1	....	226 70	221 95	.....
3	.....	.....	.....	22	.....	.....	....	1 66	.....	.....	.....	.....	....	128 00	185 45	.....
8	.....	.....	.....	20	.....	.....	....	3 35	.....	.....	.....	1	....	236 00	335 27	.....
1	.....	.....	.....	.....	.....	.....	....	31	.....	.....	.....	.....	....	13 85	22 35	.....
8	1	.....	.....	17	.....	.....	....	4 73	.....	.....	.....	1	....	363 70	226 96	.....
2	.....	.....	.....	06	.....	.....	....	1 44	.....	.....	.....	.....	....	120 70	80 55	.....
4	.....	.....	.....	1	.....	.....	....	1 63	.....	.....	.....	.....	....	60 14	.....	.....
1	.....	.....	.....	4	.....	.....	....	58	.....	.....	.....	.....	....	42 73	42 65	.....
2	.....	.....	.....	3	.....	.....	....	98	.....	.....	.....	.....	....	70 95	100 70	.....
23	4	.....	.....	40	.....	.....	....	8 03	.....	5	35 00	9	....	504 98	319 55	.....
.....	.....	.....	.....	5	.....	.....	....	24	.....	.....	.....	2	....	61 74	67 60	.....
.....	.....	.....	.....	2	.....	.....	....	03	.....	.....	.....	.....	....	10 08	7 30	.....
2	.....	.....	.....	2	.....	.....	....	68	.....	.....	.....	.....	....	42 65	.....	.....
3	.....	.....	.....	.....	.....	.....	....	70	.....	.....	.....	.....	....	53 08	26 45	.....
1	.....	.....	.....	12	.....	.....	....	67	.....	.....	.....	.....	....	50 35	41 40	.....
2	.....	.....	.....	8	.....	.....	....	1 31	.....	.....	.....	.....	....	110 55	67 60	.....
.....	.....	.....	.....	5	.....	.....	....	48	.....	.....	.....	.....	....	42 00	40 43	8 09
2	.....	.....	.....	1	.....	.....	....	74	.....	.....	.....	.....	....	29 45	52 43	.....

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Lincoln.....	1	81	2,865 51	1	12 13	2	188 00	1,411 00	1,439 00	160 00	81
	2	640	25,332 34	51	2,885 10	53	480 33	13,793 68	13,923 34	350 67	599
	3	71	3 227 00	13	990 86	5	.....	1,415 37	1,413 37	2 00	62
	4	102	4,337 13	19	1,200 69	26	28 61	3,058 73	3,033 51	53 83	91
	5	199	8,920 37	21	1,099 57	22	681 45	4,220 72	4,917 55	7 11	176
Manitoulin	1	16	729 02	4	227 07	.....	147 90	566 18	510 35	203 73	15
	2	25	660 48	5	209 81	7	65 12	391 20	441 86	14 46	31
	3	16	601 52	1	553 00	1	.....	329 43	329 43	.....	15
Middlesex.....	1	2,004	73,615 70	51	2,790 14	61	598 44	28,109 63	28,211 32	496 75	1,860
	2	87	3,042 52	9	960 80	1	.....	1,828 00	1,828 00	.....	43
	3	82	2,149 70	11	451 07	5	88 07	940 83	1,014 40	14 50	68
	4	69	3,076 19	16	942 90	2	.....	1,409 55	1 279 67	129 88	62
	5	75	3,645 08	14	944 85	10	226 47	1,389 56	1,355 56	260 47	66
	6	79	3,891 54	13	605 88	1	10 19	1,324 96	1,314 28	20 87	71
	7	32	1,507 98	8	536 49	.....	.....	582 81	582 81	.....	31
	8	3	54 30	4	176 48	.....	43 92	60 87	97 66	7 13	3
	9	365	10,921 40	12	1,062 65	51	324 90	4,157 63	4,009 91	147 72	389
Muskoka.....	1	87	4,322 98	9	504 90	3	23 00	1,585 66	1,597 62	11 04	74
	2	61	2,709 05	11	558 95	2	44 61	1,296 43	1,341 04	44 61	52
	3	74	2,205 50	14	176 23	3	88 45	1,704 88	1,778 33	15 00	81
Nipissing	1	251	9,730 60	14	981 27	3	39 55	3,377 22	3,285 84	130 90	171
	2	102	3,642 92	6	421 23	.....	25 97	2,897 53	2,836 77	60 76	100
	3	735	28,883 21	13	487 51	22	139 67	10,755 04	10,858 28	36 43	692
	5	30	1,186 84	8	706 81	6	.....	1,080 50	1,080 50	.....	30
Norfolk.....	1	216	11,558 85	13	1,054 60	80	429 50	4,938 96	4,553 39	385 57	197
	2	103	3,686 65	23	1,455 94	14	5 00	2,174 09	2,164 09	10 00	95
	3	16	701 11	1	28 72	1	.....	523 09	523 09	.....	14
	4	45	1,616 68	14	490 14	5	38 41	569 87	563 73	44 55	42
	5	24	761 11	4	236 21	1	.....	725 51	725 51	.....	24
	6	91	3,118 54	7	286 17	24	.....	1,761 51	1,761 51	.....	78
	7	13	429 65	2	141 47	6	37 56	274 87	291 93	20 45	13
	8	24	1,125 67	2	314 54	5	6 00	258 42	244 42	20 00	29
Northumberland and Durham..	1	165	5,663 72	12	374 45	5	129 77	1,728 71	1,710 28	148 20	165
	2	42	1,638 47	7	345 09	.....	41 25	938 65	913 53	66 37	40
	3	149	6,313 05	9	478 49	1	29 40	3,240 01	3,189 41	80 00	139
	4	42	1,524 00	7	470 75	1	78 20	1,027 04	1,105 24	51 55	39
	5	157	4,825 81	5	168 75	22	.....	1,730 81	1,730 81	.....	150
	6	35	1,080 65	2	431 19	5	20 00	394 63	414 63	.....	39
	7	111	5,104 73	12	372 76	9	357 42	1,869 82	2,196 94	30 30	97
	8	106	3,514 00	10	478 00	17	59 24	1,455 36	1,514 66	.....	99
	9	91	4,226 62	7	436 56	6	53 00	2,274 48	2,327 48	.....	78
	10	26	874 95	6	325 69	1	.....	332 32	332 32	.....	22
	11	135	5,881 49	11	821 84	6	76 77	2,314 19	2,144 46	246 50	130

A.—Continued.

to the 31st day of December, A.D. 1916, inclusive, etc.—Continued.

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of Jury Trials by Jurors called in pursuance of Section 142 D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's Returns of Emoluments.	Bailiff's Returns of Emoluments.	Unclaimed moneys in pursuance of section 43 D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
2	1	.....	.....	15	.....	.....	....	2 12	.....	1	10 00	1	....	164 10	129 02	.....
36	3	.....	1	130	.....	.....	....	22 73	.....	2	16 00	8	....	1 636 30	1,075 78	.....
.....	.....	.....	.....	13	.....	.....	....	4 42	.....	.....	.....	1	....	161 40	185 40	.....
11	.....	.....	.....	28	.....	.....	....	4 63	.....	.....	.....	1	....	358 70	281 26	.....
18	.....	.....	.....	37	.....	.....	....	8 56	.....	.....	.....	1	....	453 00	393 37	.....
1	1	1	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	68 25	103 38	.....
1	.....	.....	.....	9	.....	.....	....	.....	.....	.....	.....	1	....	79 05	44 80	.....
1	.....	.....	.....	2	.....	.....	....	.....	.....	.....	.....	.....	....	31 33	46 24	.....
141	.....	.....	1	615	3	31 10	....	69 66	623 62	.....	.....	6	2	4,578 75	2,227 09	.....
4	.....	.....	.....	19	.....	.....	....	2 59	.....	.....	.....	.....	....	183 25	111 76	.....
3	.....	.....	.....	18	.....	.....	....	1 89	.....	.....	.....	.....	....	144 48	62 45	2 50
7	.....	.....	.....	12	2	24 00	....	3 22	.....	.....	.....	1	....	210 06	220 10	.....
9	.....	.....	.....	13	.....	.....	....	3 78	.....	.....	.....	.....	....	229 40	263 49	.....
8	.....	.....	.....	11	.....	.....	....	4 01	.....	2	10 00	.....	....	202 63	120 35	.....
1	.....	.....	.....	9	2	30 00	....	1 46	.....	.....	.....	.....	....	96 60	104 25	.....
.....	.....	.....	.....	3	.....	.....	....	.....	.....	.....	.....	.....	....	10 46	48 09	.....
26	.....	.....	.....	101	2	26 10	....	8 44	.....	.....	.....	3	....	750 20	358 21	2 85
9	.....	.....	.....	7	.....	.....	....	.....	.....	1	10 00	.....	....	330 75	145 08	.....
.....	5	.....	.....	4	.....	.....	....	.....	.....	.....	.....	.....	....	182 80	158 08	.....
1	.....	.....	.....	15	.....	.....	....	.....	.....	.....	.....	.....	....	167 41	85 80	.....
17	.....	.....	.....	63	.....	.....	....	.....	.....	2	6 00	.....	....	534 91	735 35	.....
.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	....	.....	21 69	.....
8	1	.....	.....	8	.....	.....	....	.....	.....	3	9 00	.....	....	212 50	171 84	.....
43	1	.....	.....	147	.....	.....	....	.....	.....	6	9 00	4	....	1,897 15	1,029 03	.....
.....	.....	.....	.....	4	.....	.....	....	.....	.....	.....	.....	.....	....	133 94	.....	.....
17	.....	.....	2	126	.....	.....	....	8 40	.....	1	5 00	18	1	668 00	500 00	.....
16	2	.....	.....	27	1	12 00	....	2 67	.....	.....	.....	.....	....	191 04	203 36	.....
2	1	.....	.....	4	.....	.....	....	83	.....	.....	.....	1	....	37 20	.....	.....
3	.....	.....	.....	5	1	12 20	....	1 56	.....	.....	.....	.....	....	112 35	.....	38 41
.....	.....	.....	.....	5	.....	.....	....	45	.....	.....	.....	1	....	62 35	77 71	.....
12	.....	.....	.....	24	.....	.....	....	4 47	.....	1	10 00	5	....	275 25	305 85	.....
.....	.....	.....	.....	2	.....	.....	....	30	.....	.....	.....	3	....	44 93	57 75	.....
.....	.....	.....	.....	4	.....	.....	....	89	.....	.....	.....	.....	....	47 49	66 94	.....
12	.....	.....	1	38	3	36 00	....	5 67	.....	2	15 00	.....	....	462 15	259 15	.....
2	.....	.....	.....	4	.....	.....	....	1 37	.....	.....	.....	.....	....	127 50	120 35	2 50
11	.....	.....	.....	27	.....	.....	....	5 90	.....	1	8 00	.....	....	366 03	241 45	.....
3	.....	.....	.....	8	.....	.....	....	1 56	.....	1	20 00	.....	....	111 23	74 78	39 22
7	.....	.....	.....	47	.....	.....	....	4 21	.....	.....	.....	2	....	319 05	199 47	.....
1	.....	.....	.....	10	.....	.....	....	79	.....	.....	.....	.....	....	85 40	149 85	.....
12	.....	.....	.....	22	.....	.....	....	5 54	.....	.....	.....	6	....	322 40	165 45	.....
7	.....	.....	.....	41	.....	.....	....	.....	.....	.....	.....	2	....	302 55	208 85	.....
14	1	.....	.....	22	.....	.....	....	4 82	.....	3	25 00	.....	....	251 42	.....	.....
2	.....	.....	.....	7	.....	.....	....	83	.....	.....	.....	.....	....	62 30	81 75	.....
11	.....	.....	.....	49	.....	.....	....	4 98	.....	.....	.....	1	....	309 10	.....	.....

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Ontario.....	1	170	6,826 55	24	1,144 56	17	21 10	1,797 09	1,635 04	162 05	152
	2	64	2,522 00	12	334 91	5	.....	1,281 89	1,245 89	36 00	52
	3	50	3,190 75	7	524 50	2	.....	1,508 00	1,508 00	.....	40
	4	92	4,529 40	7	434 76	10	73 45	1,975 00	2,048 45	.....	76
	5	82	2,838 60	2	18 45	4	61 25	1,429 16	1,335 73	93 43	79
	6	42	1,587 79	14	444 24	1	.....	1,081 65	1,081 65	.....	38
	7	17	362 51	9	323 33	4	58 62	496 94	520 94	34 62	16
Oxford.....	1	710	28,258 79	24	1,075 32	157	49 43	16,811 27	16,757 67	53 60	80
	2	54	3,224 94	4	153 40	4	162 03	3,322 56	2,484 59	.....	50
	3	8	114 21	.....	.....	.....	.....	16 05	16 05	.....	8
	4	123	4,039 46	1	196 60	12	58 51	1,874 49	1,812 18	120 82	128
	5	368	9,289 50	9	447 12	40	27 25	4,354 63	4,045 10	336 78	357
	6	267	9,670 60	10	492 94	18	.....	3,772 67	3,725 17	47 50	247
	7	30	1,427 59	1	29 30	2	.....	611 55	611 55	.....	27
Parry Sound....	1	291	13,569 61	26	1,646 43	2	511 12	8,236 52	8,002 10	234 42	368
	2	13	932 14	.....	.....	1	30 27	481 87	417 60	64 27	10
	3	12	535 72	8	388 08	2	.....	578 41	578 41	.....	11
	4	52	2,032 28	4	273 35	.....	.....	1,773 89	1,737 96	35 93	42
	5	22	851 28	3	37 09	1	.....	350 02	347 02	3 00	21
	6	85	3,308 66	20	803 04	5	39 00	1,098 65	1,098 65	.....	84
	7	60	3,306 43	8	354 44	.....	19 00	1,627 21	1,627 21	.....	52
Peel.....	1	80	4,181 30	19	1,357 45	6	.....	2,255 90	2,255 90	.....	68
	2	55	2,586 00	32	2,032 19	5	.....	2,079 79	2,079 79	.....	49
	3	62	2,363 02	5	214 87	11	.....	596 67	596 67	.....	67
	4	21	1,520 25	5	408 00	2	.....	1,0 4 05	1,084 05	.....	16
Perth	1	438	16,271 54	33	2,208 33	78	30 00	8,201 36	8,093 42	137 94	516
	2	80	3,522 40	13	463 40	20	.....	1,771 63	1,771 63	.....	69
	3	115	6,059 26	9	183 40	6	.....	2,466 35	2,466 35	58 58	135
	4	7	458 53	1	23 40	1	4 00	574 15	540 15	38 00	5
	5	36	1,182 58	4	56 76	4	.....	579 28	579 28	.....	33
	6	159	5,474 42	26	1,429 39	46	.....	4,343 22	4,343 22	.....	142
Peterborough ..	1	410	18,473 04	23	1,075 29	112	60 95	8,579 65	8,512 20	67 45	392
	2	60	1,948 57	2	184 97	1	.....	912 18	912 18	.....	56
	3	43	1,994 90	6	293 17	3	53 25	1,128 44	1,161 44	20 25	37
	4	4	122 10	.....	.....	.....	.....	28 47	28 47	.....	.....
	5	122	4,440 12	2	53 13	7	64 66	2,497 12	2,561 70	.....	90
	6	7	301 35	2	122 68	.....	.....	188 78	167 78	21 00	7
Prescott and Russell.....	1	26	1,520 30	.....	.....	2	10 00	430 00	430 00	10 09	21
	2	50	2,107 18	3	127 11	.....	.....	1,057 27	1,055 27	2 00	45
	3	19	788 17	.....	.....	3	.....	537 85	527 35	7 50	19
	4	94	3,339 01	2	96 98	9	.....	1,071 33	1,016 38	54 95	96
	5	21	900 50	6	449 10	.....	37 23	476 01	479 71	42 53	21
	6	68	3,501 86	9	537 86	6	.....	2,458 96	2,458 96	.....	58
	7	157	5,121 58	.....	.....	83	.....	2,524 98	2,524 98	.....	328
	8	63	1,742 54	.....	.....	2	351 53	1,427 28	1,427 28	.....	4
	9	47	2,174 88	3	83 78	1	10 00	728 72	748 72	.....	40
	10	156	6,563 69	14	528 69	20	230 90	3,632 57	3,266 39	366 21	115
	11	80	3,662 99	6	275 36	5	.....	1,761 31	1,748 31	13 00	85
Prince Edward..	1	424	9,150 17	7	249 38	187	130 38	4,092 64	4,097 63	125 39	603
	2	4	177 95	.....	.....	1	.....	50 00	50 00	.....	4
	3	7	160 85	1	125 90	1	.....	51 35	51 25	.....	7
	4	5	89 92	5	253 22	.....	.....	139 94	139 94	.....	5
	5	53	1,553 72	.....	.....	7	9 50	1,120 53	1,090 93	39 10	58
	6	8	422 79	.....	.....	2	.....	103 76	103 76	.....	8
	7	27	684 12	3	90 58	3	.....	324 00	324 00	.....	27
	8	3	92 25	.....	.....	.....	.....	92 25	92 25	.....	3

A.—Continued.

to the 31st day of December, A.D. 1916, inclusive, etc.—Continued.

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of Jury Trials by Jurors called in pursuance of Section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of Section 43, D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
12	.....	.....	.....	34	.....	.....	....	6 47	.....	1	5 00	.....	....	367 15	413 11	.....
9	.....	.....	.....	6	.....	.....	....	3 18	.....	1	10 00	1	....	171 40	164 14	.....
10	.....	.....	.....	5	.....	.....	....	3 73	.....	1	5 00	.....	....	150 13	249 74	.....
12	.....	.....	.....	13	.....	.....	....	4 62	.....	.....	.....	.....	....	261 38	182 65	.....
3	1	.....	1	29	.....	.....	....	2 10	.....	1	5 00	.....	....	207 74	127 00	.....
3	.....	.....	.....	10	.....	.....	....	1 78	.....	.....	.....	.....	....	69 87	54 07	.....
1	.....	.....	.....	7	.....	.....	....	37	.....	.....	.....	.....	....	65 00	79 30	.....
57	1	.....	3	234	1	12 90	....	24 79	.....	11	53 00	41	....	1,754 45	1,260 75	.....
4	.....	.....	.....	.....	1	12 00	....	2 14	.....	.....	.....	.....	....	155 50	143 15	.....
.....	.....	.....	.....	3	1	11 50	....	09	.....	.....	.....	.....	....	20 70	75 00	.....
8	1	.....	.....	42	1	14 90	....	3 86	.....	.....	.....	1	....	320 90	217 31	.....
10	1	.....	.....	165	2	18 60	....	7 43	.....	3	15 00	.....	....	779 55	603 00	.....
18	.....	.....	.....	79	.....	.....	....	9 44	.....	1	10 00	5	....	461 80	489 88	.....
3	.....	.....	.....	5	.....	.....	....	1 19	.....	.....	.....	.....	....	72 04	48 00	.....
22	1	.....	.....	58	.....	.....	....	.....	.....	.....	.....	.....	....	762 05	803 26	12 68
4	.....	.....	.....	1	.....	.....	....	.....	.....	.....	.....	.....	....	46 30	64 20	.....
1	.....	.....	.....	1	.....	.....	....	.....	.....	.....	.....	.....	....	34 15	33 15	.....
3	.....	.....	.....	7	.....	.....	....	.....	.....	1	4 00	.....	....	114 30	.....	.....
1	.....	.....	.....	3	.....	.....	....	.....	.....	.....	.....	.....	....	51 74	56 50	.....
3	.....	.....	.....	15	.....	.....	....	.....	.....	.....	.....	.....	....	246 64	200 66	.....
8	.....	.....	.....	4	.....	.....	....	.....	.....	.....	.....	.....	....	144 65	118 02	.....
12	.....	.....	.....	12	.....	.....	....	4 53	.....	.....	.....	.....	....	246 40	187 93	.....
5	.....	.....	.....	10	.....	.....	....	2 48	.....	1	5 00	.....	....	208 65	90 72	.....
6	.....	.....	.....	15	.....	.....	....	2 70	.....	.....	.....	.....	....	154 45	132 50	.....
5	.....	.....	.....	2	.....	.....	....	1 76	.....	.....	.....	.....	....	81 25	63 90	.....
34	.....	.....	.....	93	.....	.....	....	16 47	.....	1	5 00	20	....	1,240 80	828 30	.....
8	1	.....	.....	10	.....	.....	....	3 98	.....	.....	.....	3	....	297 76	222 20	.....
16	.....	.....	1	43	.....	.....	....	6 49	.....	.....	.....	.....	....	300 05	237 77	.....
3	.....	.....	.....	1	.....	.....	....	84	.....	.....	.....	.....	....	27 85	32 55	.....
3	.....	.....	.....	21	.....	.....	....	1 20	.....	.....	.....	1	....	84 86	71 30	.....
17	.....	.....	.....	53	.....	.....	....	5 03	.....	1	10 00	15	....	471 60	275 99	.....
40	.....	.....	1	91	1	11 00	....	19 29	.....	5	28 00	12	....	1,304 20	778 94	.....
4	.....	.....	.....	20	.....	.....	....	1 99	.....	.....	.....	.....	....	141 65	100 00	.....
6	.....	.....	.....	8	.....	.....	....	2 29	.....	2	15 00	1	....	128 15	.....	.....
.....	.....	.....	.....	.....	.....	.....	....	09	.....	.....	.....	.....	....	10 55	9 55	.....
9	.....	.....	.....	32	.....	.....	....	4 63	.....	.....	.....	.....	....	264 16	172 70	.....
.....	.....	.....	.....	.....	.....	.....	....	30	.....	.....	.....	.....	....	13 79	.....	.....
4	.....	.....	.....	1	.....	.....	....	1 54	.....	.....	.....	.....	....	64 74	79 21	.....
5	.....	.....	.....	10	.....	.....	....	2 24	.....	.....	.....	.....	....	107 20	73 60	.....
.....	.....	.....	.....	5	.....	.....	....	57	.....	.....	.....	.....	....	55 30	50 63	.....
8	.....	.....	.....	28	.....	.....	....	3 41	.....	.....	.....	1	....	249 38	149 34	.....
.....	.....	.....	.....	2	.....	.....	....	66	.....	.....	.....	.....	....	58 89	.....	.....
12	.....	.....	.....	5	.....	.....	....	4 68	.....	.....	.....	.....	....	242 01	149 00	.....
6	.....	.....	.....	94	.....	.....	....	5 75	.....	.....	.....	17	....	567 50	263 95	.....
2	.....	.....	.....	1	.....	.....	....	19	.....	.....	.....	.....	....	107 65	116 16	.....
7	1	.....	.....	8	.....	.....	....	2 47	.....	1	5 00	1	....	130 60	102 52	.....
4	1	.....	1	27	1	.....	....	6 85	.....	.....	.....	4	....	482 80	240 41	.....
6	.....	.....	.....	18	.....	.....	....	3 39	.....	1	3 00	2	....	198 91	247 88	.....
14	4	.....	.....	.....	.....	.....	....	2 50	.....	.....	.....	4	....	951 50	754 69	.....
.....	.....	1	.....	1	.....	.....	....	09	.....	.....	.....	.....	....	20 54	15 95	.....
.....	1	.....	.....	2	.....	.....	....	09	.....	.....	.....	.....	....	18 90	23 00	.....
.....	.....	.....	.....	1	.....	.....	....	12	.....	.....	.....	.....	....	20 31	.....	.....
2	.....	.....	.....	10	.....	.....	....	1 34	.....	.....	.....	.....	....	144 75	50 20	.....
2	.....	.....	.....	1	.....	.....	....	62	.....	.....	.....	.....	....	27 85	12 14	.....
.....	.....	.....	.....	7	.....	.....	....	45	.....	.....	.....	.....	....	58 55	40 35	.....
.....	.....	.....	.....	6	.....	.....	....	.....	.....	.....	.....	.....	....	5 90	.....	.....

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Rainy River...	1	183	8,374 28	4	250 96	4	371 53	4,830 08	4,755 39	446 22	171
	2	45	3,091 26	2	266 95	4	.....	1,158 47	1,158 47	....	33
	3	107	4,805 54	5	221 01	1	297 01	2,199 46	2,101 61	394 86	98
Renfrew.....	1	373	11 311 43	6	98 88	26	181 33	3,351 18	3,338 14	197 37	380
	2	24	985 94	.....	.....	.....	... .	373 50	341 00	32 50	23
	3	192	6,090 67	18	1,003 82	6	79 17	2,451 69	2,371 69	80 00	159
	4	175	6,910 87	16	1,114 85	12	87 41	3,981 26	3,839 76	228 91	158
	5	60	2,692 72	1	130 55	6	130 00	543 57	543 57	130 00	55
	6	38	924 03	2	149 91	2	175 37	414 50	560 02	29 85	40
	7	176	5,761 74	11	677 44	6	30 00	2,711 58	2,721 58	20 00	9
Simcoe	1	302	12,715 06	21	1,182 87	37	59 00	8,004 40	7,866 42	196 98	215
	2	120	5,081 05	2	68 61	27	115 28	2,623 04	2,696 90	51 42	109
	3	75	3,678 93	6	299 95	5	13 45	1,442 23	1,404 82	50 86	52
	4	134	4,897 85	8	232 47	1	.....	2,093 26	2,007 35	85 91	128
	5	27	1,210 35	11	462 29	6	82 10	1,202 95	1,220 85	64 20	24
	6	511	15,457 44	10	838 63	86	721 47	5,850 09	5,536 23	313 86	572
	7	33	1,548 10	4	122 21	1	.....	514 36	514 36	.....	29
	8	108	4,907 36	7	227 04	6	47 94	2,991 89	3,032 96	39 74	97
	9	640	18,600 45	17	1,103 88	49	541 45	12,550 82	12,057 75	1,034 52	606
	10	96	4,016 95	8	668 96	13	.....	2,627 33	2,586 44	40 89	88
Stormont Dundas and Glengarry	1	90	4,062 68	5	248 19	22	.....	2,869 31	2,769 31	100 00	79
	2	135	6,035 81	23	1,329 53	24	208 68	1,473 49	1,180 65	292 84	125
	3	299	10,312 53	17	755 35	85	17 00	4,127 20	4,127 20	17 00	282
	4	88	5,059 73	7	383 57	11	.....	1,596 90	1,596 90	.....	72
	5	74	3,178 24	3	59 96	18	321 04	1,156 11	1,245 43	231 72	48
	6	48	1,894 85	5	192 25	.....	10 00	417 83	417 83	.....	43
	7	38	1,843 34	4	359 77	9	48 50	1,856 56	1,818 00	87 06	36
	8	81	3,616 19	7	595 72	13	....	3,433 87	3,305 94	127 93	76
	9	125	5,475 49	6	60 39	.....	.....	2,596 12	2,596 12	.....	108
	10	104	5,561 04	11	275 75	4	364 50	4,318 35	4,426 48	256 37	87
	11	20	705 91	2	129 38	.....	.....	161 56	143 56	18 00	19
	12	57	3,096 56	10	538 71	6	34 95	1,718 86	1,748 81	5 00	62
Sudbury	1	1,290	64,254 90	40	2,353 85	40	2,070 85	34.175 65	34,454 30	1,792 20	1,225
	2	84	3,479 63	17	1,173 46	6	114 91	1,717 04	1,770 65	61 30	70
	3	97	3,156 94	12	696 04	.....	261 33	1,877 91	1,906 95	231 19	95
	4	86	5,564 98	3	154 61	1	.....	3,024 53	3,024 53	.....	70
	5	121	5,200 19	2	213 44	.....	165 90	2,055 03	1,961 89	259 04	116
Temiskaming...	1	538	24,231 93	35	1,211 63	89	551 91	11.086 58	11,239 13	399 36	500
	2	538	26,423 83	53	4,013 87	109	278 52	8,410 25	8,308 23	380 54	476
	3	207	11,511 06	49	1,154 18	12	148 32	4,788 56	4,903 29	33 59	192
	4	37	2,162 96	5	371 59	1	.....	868 59	868 59	.....	30
	5	598	21,298 65	41	2,208 34	40	691 92	13,801 68	14,154 78	339 92	552
	6	291	17,859 99	21	1,507 32	9	371 60	7,757 91	7,219 45	910 06	209
	7	Burnt out									
Thunder Bay ...	1	813	39,995 24	18	1,012 57	35	213 61	15,905 44	15,720 60	184 84	757
	3	812	39,260 44	19	1,039 89	25	2,153 71	16,545·25	17,513 97	1,184 99	750

A.—Continued.

to the 31st day of December, A.D. 1916, inclusive, etc.—Continued.

Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of section 43, D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
5	.....	.....	1	40	.....	.....	....	.....	.....	.....	.....	.....	....	487 20	.....	4 50
2	.....	2	.....	2	.....	.....	....	.....	.....	.....	.....	.....	....	77 99	.....	.....
10	.....	.....	.....	15	.....	.....	....	.....	.....	....	.....	.....	....	205 80	188 11	.....
19	.....	.....	.....	107	.....	.....	....	9 17	.....	.....	.....	2	....	703 35	398 43	.....
1	.....	.....	.....	.....	.....	.....	....	8 02	.....	. ...	.....	.....	....	50 00	.....	.....
6	.....	.....	.....	27	.....	.....	....	5 52	.....	1	8 00	.....	....	358 30	450 58	.....
17	.....	.....	.....	41	.....	.....	....	7 31	.....	3	30 00	.....	....	459 95	229 55	.....
4	.....	.....	.....	14	.....	.....	....	1 77	.....	.....	.....	.....	....	133 45	183 20	.....
.....	2	.....	1	13	.....	.....	....	66	.....	.....	.....	.....	....	79 78	66 21	.....
8	.....	.....	.....	45	.....	.....	....	6 57	.....	.....	.....	2	....	389 83	466 55	.....
22	3	.....	.....	62	1	20 35	....	11 56	.....	.....	.....	10	....	955 65	279 95	.....
7	.....	.....	1	31	.....	.....	....	4 64	.....	.....	.....	3	....	352 25	241 66	.....
11	1	.....	.....	12	.....	.....	....	4 07	.....	.....	.....	.....	....	201 75	188 65	.....
7	.....	.....	1	26	.....	.....	....	4 45	.....	.....	.....	.....	....	322 50	201 50	.....
3	.....	.....	1	6	1	12 00	....	1 23	.....	.....	.....	1	....	74 00	170 03	.....
25	2	.....	.....	165	.....	.....	....	13 45	.....	1	5 00	9	....	1,286 10	522 53	.....
4	.....	.....	.....	.....	.....	.....	....	1 78	.....	.....	.....	.....	....	105 50	189 10	.....
11	1	.....	.....	20	.....	.....	....	5 31	.....	1	5 00	1	....	253 25	179 45	.....
34	.....	.....	.....	200	.....	.....	....	18 46	.....	2	10 00	24	....	1,563 25	1,109 29	.....
7	.....	.....	1	14	.....	.....	....	3 73	.....	1	5 00	3	....	309 40	279 97	.....
11	.....	.....	.....	9	.....	.....	....	4 55	.....	.....	.....	4	....	265 00	396 43	.....
10	.....	.....	.....	19	.....	.....	....	6 43	.....	.....	.....	.....	....	325 00	241 74	.....
17	.....	.....	.....	72	.....	.....	....	9 89	.....	1	5 00	12	....	890 25	384 09	.....
14	.....	.....	.....	12	.....	.....	....	4 99	.....	2	12 00	2	....	319 42	408 03	.....
10	.....	.....	.....	2	14	.....	....	3 58	.....	1	.....	2	....	219 51	148 03	.....
6	.....	.....	.....	6	.....	.....	....	2 16	....	....	.....	.....	....	150 00	.....	.....
4	2	.....	.....	3	.....	.....	....	1 87	.....	2	20 00	1	....	130 55	165 45	.....
2	.....	.....	.....	15	.....	.....	....	3 26	.....	.....	.....	.....	....	201 00	218 16	.....
11	.....	.....	.....	15	.....	.....	....	4 71	.....	.....	.....	.....	....	303 36	128 40	†....
16	.....	.....	.....	19	.....	.....	....	6 32	. ...	1	10 00	1	....	268 40	248 65	2 00
1	.....	.....	.....	2	.....	.....	....	70	.....	1	6 00	.....	....	43 89	70 91	.....
.....	.....	.....	.....	6	.....	.....	....	3 58	.....	1	5 00	3	....	166 15	218 17	.....
61	8	.....	3	161	.....	.....	....	.....	240 57	.....	.....	8	....	3,202 86	2,950 06	11 60
6	.....	.....	1	8	.....	.....	....	.....	.....	....	.....	.....	....	233 45	.....	.....
2	3	1	.....	12	.....	.....	....	.....	.....	.....	.....	.....	....	189 75	.....	.....
16	.....	.....	.....	4	.....	.....	....	.....	.....	.....	.....	.....	....	224 86	512 62	.....
5	.....	.....	.....	16	.....	.....	....	.....	.....	.....	.....	.....	....	362 54	134 65	.....
38	14	.....	.....	68	1	5 50	....	.....	.....	5	45 00	30	1	1,762 15	1,209 06	51 15
51	.....	.....	.....	70	.....	.....	....	.....	.....	2	15 00	19	1	1,648 20	1,143 79	.....
28	1	.....	.....	40	.....	.....	....	.....	.....	1	10 00	.....	....	611 88	623 64	.....
6	.....	.....	1	.....	.....	.....	....	.....	.....	....	.....	.....	....	94 95	† 115 34	.....
42	2	2	.....	111	.....	.....	....	.....	.....	8	34 00	3	1	1,567 00	1,713 13	.....
48	.....	.....	.....	1	23	.....	....	.....	.....	2	15 00	1	....	631 00	.....	5 20
91	.....	.....	.....	116	.....	.....	....	.....	68 47	.....	.....	.....	....	2,342 38	75 00	} ..
87	12	.....	3	96	.....	.....	....	.....	.....	3	16 00	.....	....	1,703 41	1,102 45 1,201 25	.....

*Estimated. †Part of year only.

TABLE

Return of Division Court Business from the 1st day of January

Name of County, United Counties, or District.	Number of Divisions.	Number of suits entered exclusive of transcripts of judgments and judgment summonses.	Amount of claims entered exclusive of transcripts of judgments and judgment summonses.	Number of transcripts of judgments received from other Courts.	Amount of claims received by transcripts of judgments from other Courts.	Number of judgment summonses issued.	Balance of cash in Court from the previous year.	Total amount of suitors' money paid into Court.	Total amount of suitors' money paid out of Court.	Balance of cash in Court.	Number of suits entered where the amount claimed does not exceed $100, exclusive of transcripts of judgments from other Courts.
			$ c.		$ c.		$ c.	$ c.	$ c.	$ c.	
Victoria	1	29	1,172 56	2	50 22	2	.....	999 82	826 86	179 96	25
	2	25	1,461 53	2	292 15	2	.....	562 12	522 12	40 00	21
	3	12	372 28	5	627 81	2	.....	418 96	418 96	.....	12
	4	10	424 85	.....	29 20	.....	.....	327 06	327 06	.....	10
	5	243	9,173 15	10	594 98	38	30 30	3,894 11	3,924 41	.....	23 2
	6	23	917 52	3	71 39	3	.....	378 29	378 29	.....	23
	7	34	1,147 51	2	67 25	.....	.....	462 03	462 03	.....	32
Waterloo.....	1	821	21,750 00	49	2,552 55	170	25 97	14,833 63	14,807 90	51 70	777
	2	149	3,671 85	9	402 01	11	34 75	2,452 25	2,452 25	.....	146
	3	435	13,199 59	23	1,370 13	121	5 03	6,793 38	6,784 92	13 50	409
	4	55	2,336 93	6	679 47	12	16 98	1,774 05	1,778 93	12 10	52
	5	36	1,870 48	7	317 75	11	.....	1,307 34	1,307 34	.....	34
	6	48	1,257 26	6	483 65	7	.....	1,555 13	1,555 13	.....	48
	7	16	360 62	.....	.....	.....	72 63	317 48	317 48	72 63	16
Welland	1	863	30,445 61	52	3,157 01	185	10 39	13,717 97	13,621 22	107 14	807
	2	56	1,432 96	8	842 28	15	55 48	1,139 30	1,186 13	8 65	54
	3	247	8,710 34	25	1,017 91	69	.....	5,710 47	5,477 75	230 72	234
	4	296	12,537 63	33	2,052 11	21	1,043 41	5,111 90	4,614 15	1,541 24	280
	5	118	5,132 84	12	789 15	6	285 70	1,235 64	1,355 14	166 20	114
	6	120	3,499 69	4	210 25	6	2 00	1,857 14	1,812 54	46 69	16
Wellington.....	1	621	18,341 74	42	2,798 41	107	98 98	7,744 03	7,786 01	57 00	595
	2	14	573 02	.....	.....	.....	.....	82 52	82 52	.....	13
	3	12	353 00	1	175 16	1	.....	450 10	450 10	.....	12
	4	85	2,929 06	6	545 35	5	18 00	1,011 78	1,029 73	.....	81
	5	29	1,255 26	7	408 65	5	.....	976 68	976 68	.....	27
	6	40	1,623 63	7	235 30	2	15 30	1,056 74	1,008 44	63 60	36
	7	36	2,144 53	5	82 26	6	102 84	1,241 51	1,264 41	79 94	33
	8	70	4,353 49	14	719 91	4	83 48	2,160 72	2,090 01	154 19	53
	10	66	3,376 67	12	510 95	3	288 17	1,753 45	1,712 99	328 63	58
	11	56	2,234 98	11	674 06	10	183 23	1,267 56	1,279 90	180 89	3
Wentworth	1	1,000	33,476 03	25	1,299 04	28	233 34	13,506 42	13,335 96	403 80	1,004
	2	215	7,241 44	14	939 39	1	.....	2,317 93	2,317 93	.....	203
	3	40	1,666 55	9	516 50	1	.....	831 56	831 56	.....	37
	4	24	1,188 37	10	1,038 89	.....	.....	988 20	988 20	.....	17
	5	135	5 910 65	10	804 30	1	.....	1,555 70	1,553 70	2 00	124
	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	8	1	60 00	.....	.....	.....	.....	.....	.....	.....	.....
	9	1,501	57,382 26	44	2,533 89	32	361 95	22,564 22	22,721 60	204 57	1,361
York..... ..	1	3,995	199,666 67	69	3,707 22	203	2,087 67	46,266 43	46,626 30	1,727 80	3,715
	2	144	9,078 29	14	618 36	9	.....	2,264 42	2,255 84	8 58	139
	3	77	2,761 01	12	752 10	1	89 83	2,341 06	2,341 06	90	70
	4	167	7,329 69	39	2,905 75	27	163 30	3,299 24	3,404 55	57 99	148
	5	44	1,365 90	8	473 97	8	92 89	1,148 61	1,173 43	67 51	43
	6	157	5,582 65	16	167 76	40	12 39	2,043 09	2,042 03	13 45	187
	7	41	2,470 86	8	764 33	4	311 03	1,632 63	1,713 52	230 14	31
	8	697	31,112 09	33	1,742 94	120	163 52	9,373 86	9,156 45	217 41	637
	9	45	2,163 17	8	483 61	11	47 25	425 42	472 67	.....	39
	10	3,268	160,583 46	92	5,823 80	326	2,360 55	34,090 36	34,246 34	2,204 57	2,940
Grand Totals..	340	59,051	2,436,776 48	3,507	195,806 56	5,973	39,491 87	1,002,293 87	992,901 23	37,628 63	52,999

A.—Concluded.

to the 31st day of December, A.D. 1916, inclusive, etc.—Concluded.

(Number of suits entered where claim does not exceed $200.	Number of actions for tort, where the amount claimed does not exceed $60.	Number of personal actions, where the parties consent thereto in writing and the amount claimed does not exceed $100.	Number of actions of replevin, where the value of the goods or other property or effects distrained, taken or detained, does not exceed the sum of $60.	Number of suits entered for claims not exceeding $10.	Number of jury trials by juries summoned.	Amount paid to jurors summoned.	Number of jury trials by jurors called in pursuance of section 142, D.C.A.	Amount payable to County Treasurer for "Division Court Jury Fee Fund."	Amount of fees and emoluments payable to the Honourable the Treasurer for the use of the Province.	Number of instances in which the Judge has allowed costs to be taxed for Counsel, Attorney or Agents' fees.	The amount of costs so taxed.	Return of judgment debtors ordered to be committed.	The number of such debtors actually committed.	Clerk's returns of emoluments.	Bailiff's returns of emoluments.	Unclaimed moneys in pursuance of Section 43, D.C.A.
						$ c.		$ c.	$ c.		$ c.			$ c.	$ c.	$ c.
2	.....	.....	.....	2	..	.....	....	1 37	.....	.....	.....	.....	....	74 03	78 00	.....
4	1	.....	.....	2	..	.....	....	1 63	.....	.....	.....	.....	....	71 17	70 50	.....
.....	.....	.....	.....	.....	..	.....	....	33	.....	.....	.....	.....	....	46 45	60 10	.....
.....	8	.....	.....	1	..	.....	....	36	.....	.....	.....	.....	....	25 90	18 72	.....
11	1	.....	.....	61	..	.....	....	6 08	.....	2	15 00	13	....	636 30	376 75	.....
.....	.....	.....	.....	4	..	.....	....	66	.....	.....	.....	.....	....	67 20	39 00	.....
2	.....	.....	.....	7	..	.....	....	1 23	.....	.....	.....	.....	....	59 69	.....	.....
42	3	.....	.....	245	1	12 00	....	23 42	24 00	.....	.....	52	1	2,120 00	1,312 80	.....
3	.....	.....	.....	28	..	.....	....	.....	.....	.....	.....	1	....	354 05	240 40	.....
26	.....	.....	1	149	..	.....	....	12 71	.....	2	10 00	19	1	1,180 60	497 45	.....
3	.....	.....	.....	9	..	.....	....	1 95	.....	.....	.....	5	1	179 86	119 09	.....
2	1	.....	.....	1	..	.....	....	1 70	.....	.....	.....	2	....	118 45	82 11	.....
8	.....	.....	.....	7	..	.....	....	3 27	.....	.....	.....	2	....	137 50	121 24	.....
.....	.....	.....	.....	7	..	.....	....	24	.....	.....	.....	.....	....	28 11	12 90	.....
50	.....	.....	.....	257	..	.....	....	32 57	73 32	5	35 00	31	2	2,361 60	1,287 55	.....
2	.....	.....	.....	21	..	.....	....	1 28	.....	.....	.....	8	....	174 80	234 70	.....
13	.....	.....	.....	54	..	.....	....	7 84	.....	1	10 00	16	1	639 20	989 89	.....
36	.....	.....	.....	73	..	.....	....	14 04	.....	.....	.....	5	....	806 09	324 00	*23 23
8	.....	.....	.....	22	..	.....	....	4 47	.....	.....	.....	.....	....	267 52	185 30	.....
9	.....	.....	.....	35	..	.....	....	4 35	.....	.....	.....	.....	....	271 62	122 20	.....
26	3	.....	.....	214	1	16 50	....	15 38	.....	2	20 00	19	2	1,645 60	393 20 605 40	.....
1	.....	.....	.....	4	..	.....	....	46	.....	.....	.....	.....	....	36 20	14 80	.....
1	.....	.....	.....	3	..	.....	....	24	.....	.....	.....	.....	....	37 20	8 10	.....
4	2	.....	.....	23	..	.....	....	2 56	.....	.....	.....	1	....	249 46	.....	.....
2	.....	.....	.....	11	..	.....	....	1 07	.....	.....	.....	1	....	102 26	87 28	.....
4	.....	.....	1	13	..	.....	....	1 78	.....	.....	.....	.....	....	92 73	81 16	.....
6	3	.....	.....	9	..	.....	....	2 40	.....	.....	.....	.....	....	130 03	107 70	.....
17	.....	.....	.....	5	..	.....	....	5 63	.....	1	5 00	1	....	267 45	246 35	.....
7	1	.....	.....	10	..	.....	....	3 38	.....	.....	.....	.....	....	182 45	178 55	68 99
.....	.....	.....	.....	14	..	.....	....	2 34	.....	.....	.....	1	....	183 95	91 50	25 00
38	16	.....	1	210	..	.....	....	29 05	88 28	4	20 00	.....	....	2,441 46	1,334 31	.....
12	2	.....	.....	60	..	.....	....	6 58	.....	.....	.....	.....	....	461 90	392 28	.....
3	.....	.....	.....	10	..	.....	....	1 41	.....	.....	.....	.....	....	97 06	65 94	.....
13	.....	.....	.....	5	..	.....	....	2 04	.....	.....	.....	.....	....	75 15	101 30	.....
11	.....	.....	.....	25	..	.....	....	6 18	.....	.....	.....	.....	....	302 55	80 00	.....
.....	.....	.....	.....	.....	..	.....	....	.....	.....	.....	.....	.....	....	.....	48 75	.....
1	.....	.....	.....	.....	..	.....	....	06	.....	.....	.....	.....	....	9 98	22 80	.....
83	29	.....	.....	279	3	38 00	....	52 98	322 47	17	116 00	3	....	3,574 90	1,661 85	2 19
280	.....	.....	13	526	..	.....	....	165 31	2,174 56	16	85 00	131	....	8,811 47	6,021 76	13 50
10	.....	.....	.....	17	1	18 20	....	6 45	.....	.....	.....	2	....	445 55	173 00	.....
8	.....	.....	1	16	1	26 00	....	2 76	.....	.....	.....	.....	....	184 30	190 35	.....
17	.....	.....	.....	29	..	.....	....	7 92	.....	.....	.....	7	1	457 85	676 53	.....
1	1	.....	1	8	..	.....	....	1 12	.....	.....	.....	2	....	151 05	84 43	.....
11	.....	.....	2	32	..	.....	....	5 09	.....	.....	.....	5	....	462 25	264 60	.....
8	.....	.....	.....	2	..	.....	....	3 02	.....	.....	.....	1	....	142 50	.....	.....
60	15	.....	.....	113	..	.....	....	30 18	.....	1	5 00	35	....	1,350 90	1,119 14	.....
6	.....	.....	.....	8	..	.....	....	.....	.....	.....	.....	.....	....	82 45	59 80	.....
328	7	.....	11	424	..	.....	....	158 00	1 593 68	12	60 00	100	1	7,359 21	6,086 10	.....
4,287	267	38	126	12,771	94	709 90	....	1,838 71	6,440 08	198	1,466 00	1,233	41	.....	.....	419 17

* Part of year only.

TABLE B.

LIST of Division Court clerks, their post office address, their county or district and number of division in which their Courts are situated, for the Province of Ontario, up to the 31st December, 1916, inclusive. (Lists corrected up to date of printing.)

County and District.	No. of Division.	Clerk.	Post office address.
Algoma	1	F. A. King	Sault Ste. Marie
	2	T. Sullivan	Bruce Mines
	3	Thos. Dodds	Thessalon
	6	W. F. Adams	Richard's Landing
	7	J. A. Hawkins	Blind River
Brant	1	James C. Spence	Brantford
	2	Jas. Smiley	Paris
	3	A. E. Green	St. George
	4	W. F. Miles	Burford
	5	Walter E. Hooker	Scotland
Bruce	1	N. Crawford	Walkerton
	2	John K. McLean	Teeswater
	3	A. G. Macintyre	Kincardine
	4	J. C. Gibson	Paisley
	5	J. A. Chapman	Port Elgin
	6		Tiverton
	7	J. R. Vandusen	Tara
	8	J. H. Fielding	Wiarton
	9	Angus Martyn	Ripley
	10	John Pettigrew	Lion's Head
	11	W. J. Little	Lucknow
	12	C. E. Biehn	Chesley
Carleton	1	J. A. Ellis	Ottawa
	2	Wm. McElroy	Richmond
	3	Jas. H. Wilson, Jr.	Carp
	4	A. S. Russell	Galetta
	5	W. H. Leech	North Gower
	6	W. C. Cameron	Metcalf
	7	W. A. Mason	Ottawa
Dufferin	1	J. M. Bennett	Orangeville
	2	W. H. Lamon	Shelburne
	3	John Ferris	Stanton
	4	Robt. Orr	Mono Mills
	5	W. A. Wansborough	Grand Valley
Elgin	1	E. C. Monteith	Aylmer
	2	John McIntyre	St. Thomas
	3	John McIntyre	St. Thomas
	4	M. S. Smith	Dutton
Essex	1	C. F. Pequegnot	Sandwich
	2	G. E. Pulford	Amherstburg
	3	Geo. Pearce	Kingsville
	4	C. Bell	Harrow
	5	*J. E. Johnston	Leamington
	6	H. Taylor	Belle River
	7	J. D. A. Deziel	Windsor
	8	Wm. Laing	Essex
	9	A. J. Brown	Comber
	10	L. D. Warner	Pelee Island

*Deputy Clerk

List of Division Court Clerks.—Continued.

County and District.	No. of Division.	Clerk.	Post office address.
Frontenac	1	Thos. Lambert	Kingston
	2	J. F. Latherland	Cataraqui
	3	D. W. Lake	Sydenham
	4	H. McMullen	Verona
	5	F. W. Ball	Battersea
	6	E. B. Buell	Sharbot Lake
	7	W. McGregor	Arden
Grey	1	A. C. Maitland	Owen Sound
	2	Archibald Davidson	Durham
	3	*A. G. Bright	Meaford
	4	W. L. Tyson	Clarksburg
	5	W. J. Bellamy	Flesherton
	6	G. W. Collins	Chatsworth
	7	John Taylor	Hanover
	8	Richard L. Stephen	Markdale
Haldimand	1	James McGregor	Caledonia
	2	B. Humphrey	Cayuga
	3	T. Armour	Dunnville
	4	C. E. Bourne	Jarvis
	5	Robert E. Johnson	Canfield R. R. No. 2
Haliburton	1	Geo. A. Rogers	Minden
	2	G. Bemister	Haliburton
	3	A. W. Fleming	Wilberforce
	4	G. D. McKay	Dorset
Halton	1	Wm. Panton	Milton
	2	W. S. Savage	Oakville
	3	J. A. Tracy	Georgetown
	4	Geo. Agnew	Acton
	5	Wm. Fraser	Campbellville
	6	Thos. Cooke	Burlington
Hastings	1	F. M. Clarke	Belleville
	2	W. Greer	St. Ola
	3	L. E. Mills	Shannonville
	4	F. A. Bartlett	Tweed
	5	Thomas G. Clute	Stirling
	6	Dennis Gillen	Madoc
	7	R. M. Jack	Deseronto
	9	C. W. London	Trenton
	10	J. C. Bowen	Marmora
	11	W. J. Douglas	Maynooth
	12	W. N. Simmons	Bancroft
Huron	1	James Yates	Goderich
	2	J. C. Greig	Seaforth
	3	H. T. Rance	Clinton
	4	S. Wilson	Brussels
	5	R. N. Creech	Exeter
	6	Nat Whyard	Dungannon
	7	Jno. Tippett	Bayfield
	8	J. G. Stewart	Wingham
	9	Thomas Brown	Wroxeter
	10	W. L. Siebert	Zurich
	11	Wm. Lewis	Crediton
	12	Jos. Stothers	Blyth

*Deputy Clerk

List of Division Court Clerks.—Continued.

County and District.	No. of Division.	Clerk.	Post office address.
Kenora	1	O. Partington	Kenora
	2	J. D. Aaron	Wabigoon
	3	J. E. Gibson	Dryden
	4	J. E. Cole	Sioux Lookout
Kent	1	W. B. Wells	Chatham
	2	W. E. Bottoms	Ridgetown
	3	H. E. Wells	Dresden
	4	J. C. Whittington	Blenheim
	5	Charles B. Jackson	Wallaceburg
	6	Jos. Dillon	Bothwell
	7	Arthur A. Wilson	Tilbury
Lambton	1	A. F. Wade	Sarnia
	2	Wm. McLeay	Watford
	3	Jas. McIntyre	Florence
	4	Wm. W. Stover	Sombra
	5	Thomas L. Jones	Forest
	6	W. C. Tudor	Thedford
	8	W. G. Fraser	Petrolea
	9	Richard Code	Alvinston
Lanark	1	R. Jamieson	Perth
	2	Robt. Beatty	Lanark
	3	A. R. G. Peden	Carleton Place
	4	A. Percy	Smith's Falls
	5	P. C. Dowdall	Almonte
Leeds and Grenville	1	I. J. Mansell	Brockville
	2	Jno. F. Graham	Prescott
	3	S. McCammon	Gananoque
	4	S. H. Guest	Kemptville
	5	M. G. Corbett	Merrickville
	6	N. L. Phelps	Delta
	7	Jas. Edgar	Toledo
	8	Ed. Wright	Newboro'
	9	E. J. Purcell	Athens
	10	M. Maguire	Spencerville
	11	John Haley	North Augusta
	12	Charles Tennant	Mallorytown
Lennox and Addington	1	A. Knight	Napanee
	2	Fred W. Armstrong	Bath
	3	Joseph B. Allison	Adolphustown
	4	Jno. H. Patterson	Newburgh
	5	Miss B. Cox	Enterprise
	6	Robt. Bennett	Odessa
	7	James Aylesworth	Tamworth
	8	J. M. Dafoe	Flinton
	9	C. P. Stein	Denbigh
Lincoln	1	Samuel Shearer	Niagara-on-the-Lake
	2	A. H. Trapnell	St. Catharines
	3	J. M. Martin	Smithville
	4	W. D. Fairbrother	Beamsville
	5	*J. G. Johnson	Grimsby
Manitoulin	1	C. C. Platt	Gore Bay
	2	David McGilvery	Little Current
	3	W. A. Beatty	Manitowaning

*Deputy Clerk

List of Division Court Clerks.—Continued.

County or District.	No. of Division.	Clerk.	Post office address.
Middlesex	1	Miss C. McIntosh	London
	2	Wm. J. McRoberts	Parkhill
	3	R. H. Collins	Lucan
	4	J. H. Matthews	Delaware
	5	Chas. George	Glencoe
	6	John H. McIntosh	Strathroy
	7	W. H. Shaw	Dorchester Station
	8	Walter R. Westlake	London, R. R. No. 2
	9	F. H. Whetter	London
Muskoka	1	Alfred Hunt	Bracebridge
	2	W. N. Moody	Gravenhurst
	3	A. R. Corbett	Huntsville
Nipissing	1	M. Lefave	Sturgeon Falls
	2	C. A. Fink	Mattawa
	3	M. W. Flannery	North Bay
	5	J. A. Levesque	Bonfield
Norfolk	1	E. E. Collins	Simcoe
	2	J. F. McKinnon	Waterford
	3	Hy. McKnight	Teeterville
	4	*Mrs. Arthur Gerhard	Delhi
	5	M. J. McColl	Vittoria
	6	A. P. Barrett	Port Rowan
	7	Watson Park	Fairground
	8	W. F. Tibbetts	Port Dover
Northumberland and Durham	1	John Moorecraft	Bowmanville
	2	L. B. Davidson	Newcastle
	3	Thos. A. Thompson	Port Hope
	4	W. S. Given	Millbrook
	5	J. C. Rosevear	Cobourg
	6	E. H. Pratt	Grafton
	7	H. S. Keyes	Colborne
	8	B. C. H. Becker	Brighton
	9	P. S. Ewing	Warkworth
	10	Wm. Little	Wooler
	11	S. J. Fisher	Campbellford
Ontario	1	Miss E. L. McDonell	Whitby
	2	M. Gleeson	Greenwood
	3	J. W. Burnham	Port Perry
	4	R. J. Moore	Uxbridge
	5	Thos. Foster	Cannington
	6	C. A. Patterson	Beaverton
	7	D. Leonard	Atherly
Oxford	1	V. L. Francis	Woodstock
	2	.....	Drumbo
	3	E. J. Cody	Embro
	4	M. L. Bushell	Norwich
	5	Neil G. Gunn	Ingersoll
	6	John C. Ross	Tillsonburg
	7	W. S. Russell	Tavistock

* Deputy Clerk.

List of Division Court Clerks.—Continued.

County or District.	No. of Division.	Clerk.	Post office address.
Parry Sound	1	W. J. Jones	Parry Sound
	2	John Fletcher	McKellar
	3	Jno. Knowles	Rosseau
	4	Fred Metcalf	Burk's Falls
	5	Harry Snuggs	Magnetawan
	6	*Mrs. T. J. Williams	Powassan
	7	John Harper	Sundridge
Peel	1	John Clarke	Brampton
	2	H. H. Shaver	Cooksville
	3	M. C. Hillock	Caledon
	4	John McDonald	Bolton
Perth	1	D. B. Burritt	Stratford
	2	J. Dougherty	Mitchell
	3	Wm. Moyes	St. Mary's
	4	Jos. Thompson	Shakespeare
	5	Wm. Zimmerman	Milverton
	6	Wm. Bright	Listowel
Peterborough	1	J. W. Miller	Peterborough
	2	J. L. Squire	Norwood
	3	W. Sherin	Lakefield
	4	Chas. Booth	Apsley
	5	F. L. Squire	Havelock
	6	W. D. Edwards	Keene
Prescott and Russell	1	E. A. Johnson	L'Orignal
	2	P. S. Paquet	Vankleek Hill
	3	Napoleon Labrosse	St. Eugene
	4	D. M. Viau	Plantagenet
	5	H. B. Cameron	Cumberland
	6	A. Carson	Russell
	7	J. A. D. Landriault	Hawkesbury
	8	A. Groulx	Fournier
	9	F. W. Langrell	Alfred
	10	W. Thevierge	Clarence Creek
	11	Peter Stewart	South Indian
Prince Edward	1	Fred Slavin	Picton
	2	J. McQuoid	Milford
	3	Charles H. Wright	Demorestville
	4	W. H. C. Roblin	Ameliasburg
	5	H. A. Jolley	Wellington
	6	C. H. Saylor	Bloomfield
	7	A. S. Burr	Consecon
	8	B. E. Harrison	Waupoos
Rainy River	1	W. H. Elliott	Fort Frances
	2	A. F. Cameron	Emo
	3	D. K. McGregor	Rainy River
Renfrew	1	J. H. Leach	Pembroke
	2	Hugh S. Miller	Beachburg
	3	M. Devine	Renfrew
	4	John R. Tierney	Arnprior
	5	Jno. Chanonhouse ,	Eganville
	6	J. R. Warren	Cobden
	7	P. J. Harrington	Killaloe Station

*Deputy Clerk

List of Division Court Clerks.—Continued.

County or District.	No. of Division	Clerk.	Post office address.
Simcoe	1	Geo. Wilson	Barrie
	2	R. E. Stevenson	Bradford
	3	Jos. Wright	Beeton
	4	A. M. Knight	Collingwood
	5	T. C. Craig	Craighurst
	6	F. Webber	Orillia
	7	R. Carter	New Lowell
	8	D. A. Lee	Alliston
	9	W. J. Martin	Penetanguishene
	10	H. Gover	Coldwater
Stormont, Dundas & Glengarry	1	J. A. B. McLennan	Williamstown
	2	S. McDonell	Alexandria
	3	G. A. Milden	Cornwall
	4	Geo. Sampson	Aultsville
	5	Jas. N. Eastman	Morrisburg
	6	Jas. Collison	Iroquois
	7	M. J. Cleland	South Mountain
	8	J. W. Carr	Finch
	9	J. R. McLeod	Dalhousie Station
	10	W. G. Bolster	Chesterville
	11	A. O. Miller	Avonmore
	12	John D. McIntosh	Dominionville
Sudbury	1	J. K. McLennan	Sudbury
	2	J. A. Bastien	Chelmsford
	3	J. C. McMillan	Webbwood
	4	S. Soufriene	Warren
	5	*Miss C. E. McMitchell	Chapleau
Temiskaming	1	Paul A. Cobbold	Haileybury
	2	F. W. Ferguson	Liskeard
	3	Samuel Errett	Englehart
	4	*A. J. Browning	Elk Lake
	5	E. Hill	South Porcupine
	6	S. L. Bradley	Cochrane
	7	Jno. Cole	Matheson
Thunder Bay	1	R. E. Mitchell	Port Arthur
	3	G. H. Coo	Fort William
Victoria	1	Arch. Campbell	Woodville
	2	J. L. Arnold	Fenelon Falls
	3	G. W. Taylor	Bobcaygeon
	4	W. H. Kennedy	Omemee
	5	J. P. Ryley	Lindsay
	6	J. F. Cunnings	Oakwood
	7	A. C. Graham	Victoria Road
Waterloo	1	Fred. Rohleder	Kitchener
	2	James D. Webster	Preston
	3	Edward D. Wilkins	Galt
	4	F. H. McCallum	New Hamburg
	5	C. W. Parsill	Linwood
	6	Wm. H. Winkler	St. Jacob's
	7	A. E. Watson	Ayr

*Deputy Clerk

List of Division Court Clerks.—Concluded.

County or District.	No. of Division.	Clerk.	Post office address.
Welland	1	Geo. Arnold	Welland
	2	Joseph Henderson	Marshville
	3	Jos. Clark	Ridgeway
	4	Jos. G. Cadham	Niagara Falls Sth.
	5	D. J. C. Munro	Thorold
	6	D. O. Evans	Port Colborne
Wellington	1	Thos. J. Day	Guelph
	2	Wm. Nicoll	Morriston
	3	Robt. Scott	Rockwood
	4	John Brownridge	Fergus
	5	A. J. Lindsay	Erin
	6	Henry Clark	Elora
	7	John Lunz	Drayton
	8	R. T. Smith	Arthur
	10	C. L. Eady	Harriston
	11	J. C. Wilkes	Mount Forest
Wentworth	1	C. J. Jones	Hamilton
	2	F. D. Suter	Dundas
	3	J. C. Medlar	Waterdown
	4	E. Dayman	Lynden
	5	J. C. Moore	Stoney Creek
	7	G. T. Neale	Glanford
	8	Thomas Murphy	Binbrook
	9	C. H. Peebles	Hamilton
York	1	A. McL. Howard	Toronto
	2	Robert J. Corson	Markham
	3	Thos. F. McMahon	Richmond Hill
	4	K. N. Robertson	Newmarket
	5	F. G. Tremayne	Sutton West
	6	W. H. Taylor	Aurora
	7	E. W. Brown	Woodbridge
	8	John Hamshaw	West Toronto
	9	J. H. Richardson	West Hill
	10	E. H. Duggan	Toronto

TABLE C.

List of Division Court Bailiffs, their Post Office Address, the County or District and Number of Division in which their Courts are situated, for the Province of Ontario, up to 31st December, 1916, inclusive. (Lists corrected up to date of printing.)

County or District.	No. of Division.	Bailiff.	Post office address.
Algoma	1	T. J. Bowers	Sault Ste. Marie
	2	O. A. Willoughby	Bruce Mines.
	3	Neil Curry	Thessalon
	6	A. Kitchen	Carterton, St. Jos. Is.
	7	Robt. George	Blind River
Brant	1	Jno. M. Dyckman	Brantford
	2	J. W. Fasken	Paris
	3	J. H. Cornell	St. George
	4	Wm. Johnston	Burford
	5	J. R. Smith	Scotland
Bruce	1	Ezra Briggs	Walkerton
	2	Jas. Donaghy	Teeswater
	3	George G. Collins	Kincardine
	4	Alex. Fraser	Paisley
	5	Wm. McFadden	Port Elgin
	6	.....	Tiverton
	7	Robt. Mill	Tara
	8	H. G. Trout	Wiarton
	9	.....	Ripley
	10	A. C. Bridge	Lion's Head
	11	R. J. Cameron	Lucknow
	12	Jno. Beatty	Chesley
Carleton	1	E. Lavoie	Ottawa
		E. T. Van Nierop	Ottawa
	2	Jos. Binnington	Stapleton
	3	Wm. Falls	Carp
	4	F. Johnson	Galetta
	5	Wesley Hicks	Kars
	6	J. Dowser	Metcalfe
	7	A. Wilson	Ottawa
Dufferin	1	Jos. Hughes	Orangeville
	2	John Reburn	Shelburne
	3	Jno. Armstrong	Earnscliffe
	4	Jos. Hughes	Orangeville
	5	J. I. Buchanan	Grand Valley
Elgin	1	W. W. White	Aylmer
	2	Geo. Smiley	St. Thomas
	3	Geo. Smiley	St. Thomas
	4	A. J. Branton	Dutton

List of Division Court Bailiffs, etc.—Continued.

County or District.	No. of Division.	Bailiff.	Post office address.
Essex	1	Alois Master	Sandwich
	2		Amherstburg
	3		Kingsville
	4	R. J. Snider	Harrow
	5	Wm. Roach	Leamington
	6		Belle River
	7	F. St. Louis	Windsor
	8	James Johnston	Essex
	9	Leon Souchereau	Stoney Point
	10	A. Vickery	Pelee
Frontenac	1	Hiram Davis	Wolfe Island
		Chas. G. Clarke	Kingston
	2		Cataraqui
	3	P. Trousdale	Sydenham
	4	E. A. Tallen	Verona
	5	E. F. Dennee	Inverary
	6	F. Kellar	Plevna
		W. Thomlison	Sharbot Lake
	7	John E. Hays	Arden
Grey	1	Robt. Taylor	Owen Sound
	2	Wm. Sharp	Durham
	3	W. H. Arthur	Meaford
	4	Geo. Mitchell	Clarksburg
	5	John Wright, Jr.	Flesherton
	6	James Dudgeon	Chatsworth
	7	F. Heimbecker	Hanover
	8	Wm. Hutchinson	Markdale
Haldimand	1	James Thorburn	Caledonia
	2	L. Young	Cayuga
	3	Wm. McIndoe	Dunnville
	4	Geo. A. Irwin	Jarvis
	5	Harvey Ricker	Canboro
Haliburton	1		Minden
	2		Haliburton
	3	J. M. Pickens	Ursa
	4		Dorset
Halton	1	E. G. Paige	Milton
	2		Oakville
	3		Georgetown
	4	John Lawson	Acton
	5		Campbellville
	6	Hiram Laud	Burlington
Hastings	1	Joshua Duffin	Belleville
		Louis Soule	Belleville
	2	Robt. Casement	St. Ola
	3	A. Burtt	Shannonville
	4	J. E. Johnston	Tweed
	5	Jas. Tanner	Stirling
	6	C. St. Charles	Madoc
	7		Deseronto
	9	H. Mumford	Trenton
	10	O. R. Jones	Marmora
	11	John Perry	Maynooth
	12	J. McCaw	Bancroft

List of Division Court Bailiffs, etc.—Continued.

County or District.	No. of Division.	Bailiff.	Post office address.
Huron	1	W. T. Moore	Goderich.
	2	Fred Welsh	Seaforth.
	3	Robt. Welsh	Clinton.
	4	Jno. Long	Brussels.
	5	C. S. Sanders	Exeter.
	6	James Mallough	Dungannon.
	7	Thomas W. Cameron	Bayfield.
	8	G. A. Phippen	Wingham.
	9	John Brethauer	Wroxeter.
	10	C. Eilber	Zurich.
	11	J. Beanes	Crediton.
	12	Richard Somers	Blyth.
Kenora	1		Kenora.
	2	H. Wright	Wabigoon.
	3	D. Wright	Dryden.
	4	G. H. Fanning	Sioux Lookout
Kent	1	Charles J. Moore	Chatham.
		A. Wells	Chatham.
	2	J. N. Wilson	Ridgetown.
	3	A. Woods	Dresden.
	4	H. B. Marshall	Blenheim.
	5	Nelson Seed	Wallaceburg.
	6	John Eachran	Thamesville
	7	Isaac Cowan	Tilbury
Lambton	1	Rich. Macdonald	Sarnia.
	2	J. F. Elliott	Watford
	3	Wm. Lindsay	Florence.
	4	N. Cornwall	Sombra.
	5	Joseph Burney	Forest.
	6	Jno. Patching	Thedford.
	8		Petrolea.
	9	Jno. A. Cummings	Alvinston.
Lanark	1	P. J. Lee	Perth.
		Robt. Burris	Perth.
	2	Jas. Darou	Lanark.
	3	H. Wilson	Carleton Place.
	4	Richard Craig	Smith's Falls.
	5	F. Coulter	Almonte.
Leeds and Grenville	1	Ed. Young	Brockville.
		R. Stratton	Brockville.
	2		Prescott.
	3	Thos. Baker	Gananoque.
	4	Michael Sweeney	Kemptville.
	5	Jno. Wilson	Merrickville.
	6	J. W. Russell	Delta.
	7	W. G. Richards	Frankville.
	8	E. J. Leech	Newboro.
		J. Steele	Westport.
	9	H. C. Phillips	Athens.
	10	Jas. P. Lawrence	Spencerville
	11	W. H. Love	North Augusta
	12	W. J. Mallory	Mallorytown.

List of Division Court Bailiffs, etc.—Continued.

County or District.	No. of Division.	Bailiff.	Post office address.
Lennox and Addington	1	Geo. Greer	Napanee
	2	H. A. Lewis	Bath
	3	R. H. Hawley	Dorland
	4		Newburgh
	5	H. W. Wager	Enterprise
	6	Geo. Watts	Odessa
	7	P. F. Carscallen	Tamworth
	8	Geo. Sedore	Flinton
	9	A. Crankshaw	Denbigh
Lincoln	1	E. W. Anderson	Niagara-on-the-Lake
	2	Richard E. Boyle	St. Catharines
	3	A. D. Lacey	Smithville
	4	Jos. Grobb	Beamsville
	5	H. C. Kelson	Grimsby
Manitoulin	1	Thos. Griffith	Gore Bay
	2	John Ramesbottom	Little Current
	3	D. Payette	Tehkummah.
Middlesex	1	R. Annett	London
	2	J. Hall	Parkill
	3	Chas. Sproal	Lucan
	4	Henry Eldidge	Delaware
	5	James Poole	Glencoe
	6	T. F. Hawkin	Strathroy
	7	Geo. Chittick	Dorchester Station
	8		Arva
	9	A. H. Yerex	London
Muskoka	1	F. K. Sander	Bracebridge
		W. E. Massey	Port Carling
	2	Chas. Richardson	Gravenhurst
	3	H. G. Harper	Huntsville
Nipissing	1	H. Kinch	Sturgeon Falls
	2	Aime Jodouin	Mattawa
		B. Keryon	Whitney
	3	D. McIntyre	North Bay
	5		Bonfield
Norfolk	1	L. H. Barber	Simcoe
	2	M. L. Boughner	Waterford
	3	J. H. Boyce	Venessa, R. R. No. 3
	4	W. J. Herron	Courtland
	5	Chas. A. Dunkin	Vittoria
	6	Plewis Pierce	Port Rowan
	7	R. Scruton	Hemlock.
	8	G. F. Holden	Port Dover
Northumberland and Durham	1	M. Munday	Bowmanville
	2	Jas. Coleman	Newcastle
	3	W. J. Harcourt	Port Hope
	4	George Wallace	Millbrook
	5	S. B. Miniffe	Cobourg, R. R. No. 4
	6	A. C. Henan	Grafton
	7	Wm. Usher	Colborne
	8	Jno. A. Marshall	Brighton
	9	William Love	Warkworth
	10	F. Ellis	Wooler
	11	G. McComb	Campbellford

List of Division Court Bailiffs, etc.—Continued.

County or District.	No. of Division.	Bailiff.	Post office address.
Ontario	1	B. F. Campbell	Brooklyn
	2	S. H. Stevenson	Brougham
	3	Jos. Baird	Manchester
	4	J. Steiner	Uxbridge
	5	Lachlin McBain	Cannington
	6	Wm. Dobson	Beaverton
	7	Geo. Elliott	Brechin
Oxford	1	Benj. Hobson	Woodstock
	2	A. W. Burgess	Drumbo
	3	J. A. McKay	Embro
	4	Arthur Catton	Norwich
	5	John Haycock	Ingersoll
	6	E. A. Ellis	Tillsonburg
	7	Jos, Dewal	Tavistock
Parry Sound	1	J. F. Fenton	Parry Sound
	2	J. S. Moore	McKellar
	3	Wm. Atkinson	Rosseau
	4	H. Stewart	Burk's Falls
	5	S. Walton	Magnetawan
	6	Jno. Lang	Powassan
	7	Jno. Willoughby	Sundridge
Peel	1	Robt. Taylor	Brampton
	2	Wm. H. Rutledge	Cooksville
	3	D. McArthur	Caledon
	4	Thos. Barons	Bolton
Perth	1	D. W. Forbes	Stratford
	2	John Coppin	Mitchell
	3	Wm. Billings	St. Mary's
	4	Jno. S. Gabel	Shakespeare
	5	Chas. Welker	Milverton
	6	R. Woods	Listowel
Peterborough	1	Harold Laplante	Peterborough
	2	F. J. Stewart	Norwood
	3	Robt. Webster	Lakefield
	4	.....	Apsley
	5	A. Waller	Havelock
	6	Thos. McIntyre	Keene
Prescott and Russell	1	S. W. Wright	L'Orignal
	2	S. Duchesneau	Vankleek
	3	E. Labrosse	St. Eugene
	4	J. A. Therrien	Curran
	5	.....	Cumberland
	6	Thos. Yonge	Russell
	7	D. Millette	Hawkesbury.
	8	Ira Gates	Fournier
	9	H. Larocque	Alfred
	10	John A. Dent	Rockland
		Moise Laviolette	Clarence Creek
	11	A. L. Macdonald	South Indian

List of Division Court Bailiffs, etc.—Continued.

County or District.	No. of Division.	Bailiff.	Post office address.
Prince Edward	1	D. Hoover	Picton
	2	G. N. Ostrander	Milford
	3	George Farrell.	Demorestville
	4		Ameliasburg
	5	Niles Searls	Wellington
	6	J. W. Branscombe	Bloomfield
	7	Herman W. Weeks	Consecon
	8	E. A. Williams	Waupoos
Rainy River	1	J. B. Moshier	Fort Frances
	2		Emo
	3	R. McRitchie	Rainy River
Renfrew	1	Geo. McDonald	Pembroke
	2		Beachburg
	3	C. Miller	Renfrew
	4	John Warnock, jr.	Arnprior
	5	Wm. Luloff	Eganville
	6	E. Olmstead	Cobden
	7	Jno. Roche..	Killaloe Sta.
Simcoe	1	John Weymouth	Barrie
	2	W. Simpkin	Bradford
	3	D. W. Watson	Beaton
	4	R. Moulding	Collingwood
	5	Ed. Corlett	Hillsdale
	6	George Reeve	Orillia
	7	Wm. Switzer	New Lowell
	8	John R. Arnold	Alliston
	9	Ed. E. J. Hewson	Penetanguishene
	10	G. A. Abbott	Coldwater
Stormont, Dundas and Glengarry	1	John Burgess	Williamstown
	2	J. D. McDougall	Alexandria
	3	W. S. Smith	Cornwall
	4	J. P. Ferguson	Osnabruck Centre
	5	Jacob Hopper	Morrisburg
	6	C. Larabee	Iroquois
	7	E. Bush	Hallville
	8	A. McIntosh	Finch
	9		
	10	J. W. Bogart	Moerwood
	11	Chas. W. Kahala	Avonmore
	12	Donald J. Robertson	Maxville
Sudbury	1	C. Gravelle	Sudbury
	2	H. Gratton	Chelmsford
	3	Jno. E. McLandress	Webbwood
	4	J H. Boyd	Warren
	5	*Thos. Smith	Chapleau
Temiskaming	1	*H. E. Blackwell	Haileybury
	2	J. H. Brown	New Liskeard
	3	William McPherson	Englehart
	4	C. McCarthy	Elk Lake
	5	H. Warren,	South Porcupine
	6		Cochrane
	7	J. Henderson	Matheson

*Deputy Bailiff

List of Division Court Bailiffs, etc.—Concluded.

County and District.	No. of Division.	Bailiff.	Post office address.
Thunder Bay	1	W. H. Nelson	Port Arthur
	1	B. T. Udale	Schreiber
		.....	Nipigon
	3	H. Johnston	Fort William
Victoria	1	S. Dumond	Woodville
	2	E. Mark	Fenelon Falls
	3	W. Mitchell	Bobcaygeon
	4	W. R. McQuade	Omemee
	5	J. W. Wallace	Lindsay
	6	Wm. J. McCullough	Oakwood
	7	.....	Kirkfield
Waterloo	1	S. E. Moyer	Kitchener
	2	W. A. Bolduc	Preston
	3	Levi Bawtinheimer	Galt
	4	E. Scherer	New Hamburg
	5	H. Holle	Hawkesville
	6	H. Holle	Hawkesville
	7	.....	Ayr
Welland	1	J. C. Nixon	Welland
	2	Jno. Haymes	Marshville
	3	Jno. R. Huffman	Ridgeway
	4	S. B. Bedell	Niagara Falls
	5	R. C. Higgins	Thorold
	6	J. A. Crysler	Port Colborne
Wellington	1	Jno. Ogg	Guelph
	1	Wm. Young	Guelph
	2	Jno. Ogg	Guelph
	3	.....	Eramosa
	4	.....	Fergus
	5	D. Doherty	Erin
	6	J. W. Love	Elora
	7	Wm. Richards	Drayton
	8	.....	Arthur
	10	Ed. Johnson	Clifford
	11	Thos. Ryan	Mount Forest
Wentworth	1	Jas. Bryers	Hamilton
	2	W. M. McNeilly	Dundas
	3	J. Metzger	Waterdown
	4	W. M. McNeilly	Troy
	5	A. N. Smith	Stoney Creek
	7	Jas. Thompson	Binbrook
	8	Jas. Thompson	Binbrook
	9	J. A. Atkinson	Hamilton
York	1	Chas. Synge	Toronto
	2	.....	Locust Hill
	3	Geo. Thompson	Richmond Hill
	4	A. E. Widdifield	Newmarket
	5	Peter Grant	Sutton
	6	W. H. Machell	Aurora
	7	Thos. Rowntree	Woodbridge
	8	D. W. Procter	Runnymede
	9	*Wm. Heron	West Hill
	10	Frank Woods	Toronto

*Deputy Bailiff

TABLE D.

DIVISION COURTS, LIMITS OF THE RESPECTIVE DIVISIONS IN THE PROVINCE OF ONTARIO, AND JUDICIAL OFFICERS.

ALGOMA.

F. Stone, Judge, Sault Ste. Marie.
, J.J., Sault Ste. Marie.
G. W. Goodwin, Crown Attorney and C.P., Sault Ste. Marie.

1.—Bounded west by Thunder Bay District, 85th parallel of west longitude and east by Bar River, including all the islands in front.

2.—Bounded west by Bar River and east by the westerly boundary of the Townships of Thessalon, Kirkwood, Bridgeland, Houghton and Otter, and by said boundary line of the said last five-named townships produced northerly.

3.—Bounded west by the westerly boundary of the Townships of Thessalon, Kirkwood, Bridgeland, Houghton and Otter, and the boundary line of the last named five townships produced northerly to the northern boundary of the District, and on the east by a line produced northerly between the Townships of Bright and Thompson to the northern boundary of the District of Algoma.

6.—Consisting of St. Joseph's Island.

7.—All the Territory of the District of Algoma lying east of the eastern boundary of the Third Division including the Village of Cutler and Johns Island.

BRANT.

A. D. Hardy, Judge, Brantford.
A. J. Wilkes, C.C.A. and C.P., Brantford.

1.—The City of Brantford and that part of the Township of Brantford not included in the other divisions hereinafter described. The Townships of Onondaga and Tuscarora and that part of the Township of Brantford lying south of the main road from Brantford to Hamilton and east of Fairchild's Creek.

2.—The Town of Paris and that part of South Dumfries west of the line between lots 18 and 19, and that part of the first concession of the Township of Brantford lying west of a continuation of the last-mentioned line.

3.—The remainder of the Township of South Dumfries, and of the first concession of the Township of Brantford.

4.—The ten northern concessions of the Township of Burford, and all that part of the 2nd, 3rd, 4th and 5th concessions of the Township of Brantford, west of the line between lots numbers 10 and 11, and that portion of the Kerr tract west of the continuation of the last-mentioned line.

5.—The Township of Oakland, the four southern concessions of the Township of Burford and lots numbers 1 to 5, inclusive, in the ranges east and west of the Mount Pleasant Road, in the Townships of Brantford, adjoining the Township of Oakland.

BRUCE.

A. B. Klein, Judge, Walkerton.
A. M. Greig, J.J., Walkerton.
Thomas Dixon, C.C.A. and C.P., Walkerton.

1.—The Town of Walkerton and the Township of Carrick and the Township of Brant, south of the 12th concession, in the lots up to No. 26, and south of the 10th concession, in lots 26 to 34 inclusive.

2.—The Village of Teeswater, the Townships of Culross and Greenock south of the 12th concession.

3.—The Town of Kincardine, the Township of Kincardine, lying south of the 10th concession.

4.—The Village of Paisley, and that part of the Township of Brant lying north of the 11th concession and west of lot 26. That part of Greenock lying north of concession 11; lots 26 to 35, inclusive, in the 8th, 9th, 10th, 11th, 12th, 13th and 14th concessions of the Township of Bruce; and Saugeen, east of a line between lots 28 and 29, and south of the proportion of the town line between Arran and Elderslie to the Saugeen River. All Elderslie lying west of the 25th side line and south of the 12th concession. And also that part lying north of concession 11 and west of lot 17.

5.—All of the Township of Amabel lying north of the 10th concession, Port Elgin and Southampton, and all Saugeen not in No. 4, Arran, west of the line between lots 10 and 11, north of Arran Lake and its outlet, and Amabel, south of concession 11, and west of concession C, and concessions 8, 9 and 10.

6.—The Village of Tiverton and all the Township of Bruce, except that part included in No. 4, and all Kincardine north of the 9th concession.

7.—Tara and all Arran, not in No. 5, and all Elderslie, not in Nos. 4 and 12, and Amabel, south of the 8th concession and east of concession lettered C.

8.—The Town of Wiarton, the Township of Albemarle and that part of Amabel not in Nos. 5 and 7.

9.—The Township of Huron.

10.—The Townships of Eastnor, Lindsay, and St. Edmunds.

11.—Lucknow and the Township of Kinloss.

12.—Chesley and those parts of Brant and Elderslie not included in Nos. 1, 4 and 7.

CARLETON.

D. B. McTavish, Judge, Ottawa.

R. D. Gunn, J.J., Ottawa.

J. A. Ritchie, C.C.A. and C.P., Ottawa.

1.—Comprising all the City of Ottawa and the Township of Gloucester, to lot 15, inclusive, Rideau Front, and concessions 1 and 6, inclusive, Ottawa Front and the islands in the Ottawa River opposite thereto.

2.—The Township of Goulburn, the 8th, 9th, and 10th concessions of the Township of Marlborough, all the Township of Nepean south of the River Goodwood, and the 4th, 5th, and 6th concessions thereof north of the same river to the boundary line between lots 20 and 21 in the last-mentioned concession.

3.—The Township of Huntley and the Township of March, except lots 1 to 5, inclusive, in concession 1, 2, 3 and 4 thereof.

4.—The Townships of Fitzroy and Torbolton.

5.—The Township of North Gower, Long Island in the Rideau River, and 1st, 2nd, 3rd, 4th, 5th, 6th and 7th concessions of Marlborough.

6.—The Township of Osgoode, the 6th, 7th, and 8th concessions Ottawa Front, and from lots 16 to 30, inclusive, of Rideau Front of the Township of Gloucester.

7.—The Township of Nepean, except the City of Ottawa, and part of the said Township lying south of the River Goodwood and concessions 4, 5 and 6, north of the River Goodwood to the boundary between lots 20 and 21 in the said last-mentioned concessions, and including also lots 1 to 5, inclusive, in concession 1, 2, 3 and 4, in the Township of March.

DUFFERIN.

W. G. Fisher, Judge, Orangeville.

J. L. Island, C.C.A. and C.P., Orangeville.

1.—The Town of Orangeville, the Township of East Garafraxa and all that portion of the Township of Amaranth lying south of the southern boundary of lot No. 26, in each concession in the Township of Amaranth.

2.—The Village of Shelburne, the Township of Melancthon, and all that portion of the Township of Amaranth lying north of the southern boundary of lot number 26, in each concession of the Township of Amaranth.

3.—The Township of Mulmur.

4.—The Township of Mono.

5.—The Township of East Luther.

ELGIN.

C. W. Colter, Judge, St. Thomas.

C. O. Z. Ermatinger, J.J., St. Thomas.

A. McCrimmon, C.C.A. and C.P., St. Thomas.

1.—The Townships of Bayham, Malahide and South Dorchester.

2.—The Townships of Southwold and Yarmouth (except the City of St. Thomas).

3.—The City of St. Thomas.

4.—The Townships of Aldborough and Dunwich.

ESSEX.

J. O. Dromgole, Judge, Sandwich.

G. Smith, J.J., Sandwich.

J. H. Rodd, C.C.A. and C.P., Windsor.

1.—Town of Sandwich and Township of West Sandwich.

2.—Town of Amherstburg and the Townships of Malden and Anderdon.

3.—The Village of Kingsville, and all that part of the Township of Gosfield not included in Division No. 8.

4.—The Township of Colchester South, and all Colchester North, south of the 9th concession, exclusive of the said concession, and the lots on both sides of Malden Road.

5.—Township of Mersea and Village of Leamington.

6.—The Township of Rochester, the Village of Belle River, the first concession of the Township of Maidstone, and all north of the Malden Road in the said Township of Maidstone.

7.—Town of Windsor, the Town of Walkerville, and all of Sandwich East, north of the Talbot Street range.

8.—The Town of Essex, and all of the Township of Maidstone lying west of the first concession and south of the Malden Road; so much of Sandwich East as is south of Talbot Street, including the lots on both sides of said street to Nos. 306 and 307; all of Colchester north of the 9th concession, including said concession and lots on both sides of Malden Road, and all that part of Gosfield lying north of concession 6, and extending as far east from the limits between Gosfield and Colchester as lots No. 12, including such lot in each concession north of concession 6, inclusive.

9.—The Townships of Tilbury West and Tilbury North.

10.—The Township of Pelee.

FRONTENAC.

H. A. Lavell, Judge, Kingston.

J. L. Whiting, C.C.A. and C.P., Kingston.

1.—City of Kingston, Township of Garden Island, Wolfe Island, Howe Island, and part of the Township of Pittsburg.

2.—Cataraqui, the Township of Kingston and the Village of Portsmouth.

3.—Loughboro', the Townships of Loughboro' and Bedford.

4.—Verona, Townships of Portland and Hinchinbrooke.

5.—Sudbury, the Township of Storrington and part of the Township of Pittsburg.

6.—The Townships of Olden, Oso, Barrie, Clarendon, Palmerston, Miller, Canonto, and South Canonto.

7.—The Township of Kennebec.

GREY.

C. T. Sutherland, Judge, Owen Sound.

C. H. Widdifield, J.J., Owen Sound.

T. H. Dyre, C.C.A. and C.P., Owen Sound.

1.—The Town of Owen Sound, the Village of Brooke and the Townships of Derby, Keppel, Sarawak and Sydenham.

2.—The Town of Durham, the Township of Egremont, and those portions of the Townships of Bentinck, Normanby and Glenelg as follows:—That part of the Township of Bentinck lying east of the line between lots 30 and 31 in the 1st, 2nd and 3rd concessions south of the Durham Road, and in concessions 1, 2 and 3 north of the Durham Road, and east of the line between lots 15 and 16 in concessions 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15 thereof. That part of the Township of Normanby lying east of the line between lots 20 and 21, in the 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th and 18th concessions, and all of the Township of Glenelg, excepting that portion lying east of the line between lots 10 and 11 in the 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th and 15th concessions thereof.

3.—The Town of Meaford, the Township of St. Vincent, and that part of the Township of Euphrasia, lying west of the line between the 6th and 7th concessions and north of the line between lots 15 and 16.

4.—The Township of Collingwood and the east half of the Township of Euphrasia, excepting that part thereof lying between the 4th and 5th concessions and south of the lots between 12 and 13, and east half of the Township of Osprey.

5.—The Township of Proton, the west half of the Township of Osprey, and those parts of the Township of Artemesia consisting of the ranges of lots lying parallel to the Toronto and Sydenham Road, and south of the line between lots 130 and 131, and concessions 1, 2 and 3 south of the Durham Road, and 1, 2, 3, 4, 5 and 6 north of the said Durham Road, and those portions of concessions 7, 8 and 9 lying east of the ranges of lots parallel with the Toronto and Sydenham Road, and those portions of concessions 10, 11, 12, 13 and 14 lying east of the line between lots 30 and 31.

6.—The Township of Sullivan and the Township of Holland, excepting those portions of concessions 9, 10, 11 and 12 lying south of the line between lots 15 and 16, and those portions of concessions 7 and 8 west of the ranges of lots lying parallel with the Toronto and Sydenham Road, and the ranges of lots lying parallel with the Toronto and Sydenham Road and south of the line between lots 50 and 51.

7.—All the lots from 1 to 30, inclusive, in the three concessions south and the three concessions north of the Durham Road in the said Township of Bentinck, and all the lots from 1 to 15, inclusive, in the 12th concession, from the 4th to the 15th concessions, inclusive, of the said Township of Bentinck, and all the lots from 1 to 20, inclusive, in all the concessions from 4 to 18, inclusive, in the Township of Normanby aforesaid.

8.—All the lots from 51 to 130, inclusive, in all the concessions parallel to and being northeast and southwest of the Toronto and Sydenham Road, in the Townships of Artemesia, Glenelg and Holland aforesaid; all lots to the westward of the dividing line between lots 30 and 31, in all the concessions from 10 to 14, inclusive, and all the lots from 1 to 5 in the 7th, 8th and 9th concessions, inclusive, which lie to the southwest of the third concession, southwest of the said Toronto and Sydenham Road, in the said Township of Artemesia; all the lots from 1 to 15, inclusive, in concessions 5 and 6, and all the lots from 1 to 15, inclusive, in the concessions from 7 to 12, inclusive, in the Township of Euphrasia; all lots south of the allowance for road between lots 15 and 16, in the 9th, 10th, 11th and 12th concessions, and from lots 25 to 30, inclusive, on the 7th concession, and lots 28, 29, and 30 in the 8th concession of the said Township of Holland; and all the lots lying east of allowance for road between lots 10 and 11 in all the concessions from 7 to 15, inclusive, in the Township of Glenelg.

HALDIMAND.

G. H. Hopkins, Judge, Cayuga.

Harrison Arrell, C.C.A. and C.P., Cayuga.

1.—Comprising the Township of Seneca, except the first and second concessions, the Young Tract, and the property of the late Richard Martin and the late Robert Weir; all of the Township of Oneida, except the first range north of the Cayuga line, the Dennis Tract, and the lots southerly of the said tract, and the Village of Caledonia.

2.—Comprising the Township of North Cayuga, except that portion thereof lying northeast of the side line between lots 12 and 13, and 1st and 2nd concessions of the Township of Seneca, except that portion thereof lying northeast of the side line between lots 12 and 13, the Young Tract, and the lands of the late Robert Weir and Richard Martin, Esquires, in the said Township of Seneca, the first range of Oneida north of the Cayuga line, also the Dennis Tract and river lots lying south, and the Townships of Rainham and South Cayuga.

3.—Comprising the Townships of Moulton, Sherbrooke and Dunn, and the Town of Dunnville.

4.—Comprising the Township of Walpole, and the Village of Hagersville.

5.—Comprising the Township of Canboro', that portion of North Cayuga lying east of the side line between lots 12 and 13, and those parts of the 1st and 2nd concessions of the Township of Seneca lying northeast of the side line between lots 12 and 13.

COUNTY OF HALIBURTON.

(Annexed to Victoria for Judicial Purposes.)

W. D. Swayze, Judge, Lindsay.

H. McMillan, J.J.

T. H. Stinson, C.P. and C.C.A., Lindsay.

1.—The Townships of Glamorgan and Snowden, except that portion of both included in the third division, and all of the Townships of Snowden, Lutterworth, Minden, Anson, Stanhope, Hindon.

2.—The Townships of Dysart, Guilford, Harburn, Dudley, Harcourt and Bruton, and that portion of Monmouth not included in the third division.

3.—All the rest of the territory comprising Township of Monmouth (except lots 1 and 19, inclusive) in 13th, 14th, 15th, 16th and 17th concessions; the south 12 concessions of the Township of Glamorgan, and from lot 21, inclusive, to the eastern boundary in the south six concessions of Snowden.

4.—The Townships of Shelbourne, McClintock, Livingstone, Lawrence, Nightingale, Havelock, Eyre and Clyde.

HALTON.

J. W. Elliott, Judge, Milton.

W. I. Dick, C.C.A. and C.P., Milton.

1.—All the territory comprised in the new survey of the Township of Trafalgar, and the first ten lots in concessions 1, 2, 3, 4, 5 and 6 in the Township of Esquesing, and the first five lots in concessions 7, 8, 9, 10 and 11 in the said township.

2.—That part of the Township of Trafalgar known as the Old Survey.

3.—All the rest of the territory comprised in concessions 8, 9, 10 and 11 in the Township of Esquesing not comprised in the first division.

4.—All the rest of the territory comprised in concessions 1, 2, 3, 4, 5 and 6, Township of Esquesing.

5.—The Township of Nassagaweya.

6.—The Township of Nelson.

HASTINGS.

G. E. Deroche, Judge, Belleville.

J. F. Wills, J.J., Belleville.

Wm. Carnew, C.C.A. and C.P., Belleville.

1.—The City of Belleville and the Township of Thurlow; also all that portion of the Township of Sidney lying south of the 8th concession and east of the line between lots 18 and 19.

2.—The Townships of Wollaston, Limerick and Cashel, and the six northerly concessions of the Townships of Tudor and Grimsthorpe, and all those parts of the Township of Lake, in all the concessions thereof lying north of lots 21 in said concessions, all in the County of Hastings.

3.—The Township of Tyendinaga, except that part called Deseronto.

4.—The Township of Hungerford.

5.—All that part of the Township of Sidney which lies to the north of the 7th concession, and all that part of the Township of Rawdon which lies to the south of the 9th concession, and that part of the Township of Huntingdon south of the 6th concession.

6.—The Township and Village of Madoc, the Township of Elzevir and all that part of the Township of Huntingdon north of the 5th concession, and all of the Townships of Tudor and Grimsthorpe, except the northerly six concessions of each of the said townships.

7.—The village of Deseronto.

9.—The Town of Trenton, and all that part of the Township of Sidney lying south of the 8th concession and west of the line between lots 18 and 19.

10.—The Township of Marmora, that part of the Township of Lake lying south of lots 22 in all the concessions thereof, and all that part of the Township of Rawdon which lies north of the 8th concession thereof.

11.—The Townships of Herschell, Monteagle, Carlow, Bangor, Wicklow and McClure.

12.—The Townships of Faraday, Dungannon and Mayo, and the Village of Bancroft.

HURON.

L. H. Dickson, Judge, Goderich.

Philip Holt, J.J., Goderich.

Chas. Seager, C.C.A. and C.P., Goderich.

1.—Comprising the Town of Goderich, that part of the Township of Goderich to the north of the Cut Line and the Huron Road until the same meets the road allowance between the 13th and 14 concessions, then back along the Huron Road to its junction with the Cut Line, then west by the road allowance between concessions 11 and 12 to the River Maitland, then along the River Maitland to Goderich, together with the Township of Colborne.

2.—Comprising the Township of McKillop, the Town of Seaforth, and all that portion of the Township of Tuckersmith not included in the third division.

3.—Comprising all that portion of the Township of Hullett south of the blind line between the 7th and 8th concessions, of the Township of Hullett, that part of the Township of Goderich not included in Nos. 1 and 7, 1st, 2nd, 3rd and 4th concessions, Township of Stanley 1st and 2nd concessions, Township of Tuckersmith, L.R.S., north of lot 15, and that portion west of side road between lots 25 and 26, H.R.S., and Town of Clinton.

4.—Comprising the Township of Grey, all of the Township of Morris east of side road between lots Nos. 10 and 11 (which is not included in No. 12) and the Village of Brussels.

5.—Comprising the Townships of Usborne and the Village of Exeter.

6.—Comprising the Townships of Ashfield and all West Wawanosh, except that portion east of Maitland River.

7.—Comprising the Township of Goderich, south of Cut Line and Huron Road until the same joins the road between the 12th and 14th concessions of the Township of Goderich; thence along the said concessions until the same joins the River Bayfield, all Stanley not included in No. 3 and the Village of Bayfield.

8.—Comprising the Village of Wingham, the Township of Turnbury, all that part of East Wawanosh not included in No. 12, and all of the Township of Morris not included in Nos. 4 and 12.

9.—Comprising the Township of Howick and the Village of Wroxeter.

10.—Comprising the Township of Hay.

11.—Comprising the Township of Stephen.

12.—Commencing at the northeast angle of the Township of Hullett, thence southerly along the easterly boundary of the said Township of Hullett to the blind line between the 7th and 8th concessions of said township, thence westerly along said line to the western boundary of the township, thence northerly along the westerly boundary of the township to the Maitland River at the southeastern corner of the Maitland Block, thence along the said river northerly till the western boundary of East Wawanosh is reached, thence northerly along said westerly boundary to the road running between the 6th and 7th concessions of said Township of East Wawanosh, thence easterly along said road to the easterly limit of said township, thence northerly along the gravel road to the road running between the 5th and 6th concessions of the Township of Morris, thence easterly along said road to the line between lots 10 and 11, thence southerly along said line between the 6th and 7th concessions, thence easterly along said line to the line between lots 15 and 19, thence southerly to the boundary line between the Townships of Morris and Hullett, thence easterly to the place of beginning, including the Village of Blyth.

DISTRICT OF KENORA.

T. W. Chapple, Judge, Kenora.

J. F. MacGillivray, C. Atty. and C.P., Kenora.

1.—Comprising all the portion of the said District of Kenora lying west of the Seventh Meridian Line, including the Towns of Kenora and Keewatin.

2.—Comprising all that portion of the said District lying east of the eastern boundary of the Third Division, south of the northern boundaries of the Townships of Zealand and Hartman to the eastern boundary of the said District, including the Municipality of Ignace.

3.—Comprising all that portion of the said District lying between the Seventh Meridian Line and a line drawn parallel with the western boundary of lot 10 in the Township of Zealand, and extending northward to the northern boundary of the said District and southward to the southern boundary thereof, including the Town of Dryden.

4.—Comprising all that portion of the said Second Division, lying north of a line drawn eastward along the northern boundaries of the Township of Zealand and Hartman, to the eastern boundary of the said District of Kenora.

KENT.

Ward Stanworth, Judge, Chatham.

J. J. Coughlin, J.J., Chatham.

H. D. Smith, C.C.A. and C.P., Chatham.

1.—The First Division to consist of the City of Chatham and that part of the Townships of Dover East and West to the south of the 12th and 13th concession

line of the Township of Dover East, and that part of the Township of Chatham south of the 12th and 13th concession line, and west of the side roads between lots 12 and 13, from the first mentioned 12th and 13th concession line to the 5th and 6th concession line, and all south of the said 5th and 6th concession line of said township; that part of the Township of Harwich north of 5th and 6th concession line, by the easterly boundary; that part of the Township of Raleigh north of the 16th concession to the west side road between lots 12 and 13 north to the 6th and 7th concession line, and all of the said township north of the said last-mentioned line, and that part of the Township of Tilbury East north of the 4th concession.

2.—The Second Division to consist of that portion of Township of Howard south of the 2nd and 3rd concession line by the eastern boundary (known as the Botany Road), and that part of the Township of Orford south of the 10th and 11th concession line of said township.

3.—The Third Division to consist of all that part of the Gore of Camden lying west of the 10th and 11th concession line, and that part of the Township of Camden lying west of the side line between lots 6 and 1; the Village of Dresden, and that part of the Township of Chatham north of the 5th and 6th concession line and east of the side roads between lots 12 and 13.

4.—The Fourth Division to consist of that part of the Township of Harwich south of the 5th concession of the eastern boundary, and south of the 3rd concession by the western boundary, and that part of Raleigh south of the 15th concession and east of the side road between lots 12 and 13 and the road to the shore through lot 146 on the Talbot Road.

5.—The Fifth Division to consist of the Village of Wallaceburg, the Gore of Chatham and that part of the Township of Chatham northwest of the 12th and 13th concession line, and west of the said roads between lots 12 and 13, and that part of Dover lying north of the 12th and 13th concession side road.

6.—The Sixth Division to consist of that part of the Township of Howard north of the Botany Road aforesaid, and that part of the Township of Oxford north of the 10th and 11th concession line, the Township of Rone, the Township of Bothwell, the Village of Thamesville, and that part of the Gore of Camden east of the 10th and 11th concession line, and that part of the Township of Camden east of the side line between lots 6 and 7.

7.—The Seventh Division to consist of that part of Tilbury East south of the 3rd concession, the Township of Romney, and that part of the Township of Raleigh south of the 6th and 7th concession line, and west of the side road between lots 12 and 13, in the said township, and the road through lot 147 on Talbot Road.

LAMBTON.

D. F. Macwatt, Judge, Sarnia.
A. E. Taylor, J.J., Sarnia.
F. W. Willson, C.C.A. and C.P., Sarnia.

1.—The City of Sarnia, the Townships of Sarnia and Moore, and the Villages of Point Edward and Cartwright.

2.—The external boundaries of the Township of Warwick, including that portion of the Village of Arkona south of the township line.

3.—The external boundaries of the Townships of Euphemia and Dawn.

4.—The external boundaries of the Township of Sombra.

5.—The external boundaries of the Township of Plympton.

6.—The external boundaries of the Township of Bosanquet, including that portion of the Village of Arkona north of the township line.

8.—The external boundaries of the Township of Enniskillen.

9.—The external boundaries of the Township of Brooke.

LANARK.

J. H. Scott, Judge, Perth.
A. C. Shaw, C.C.A. and C.P., Perth.

1.—The Town of Perth, and the Townships of Drummond, Bathurst, South Sherbrooke, Burgess North, and that part of the Township of Elmsley North, north of the Rideau River, within the County of Lanark, and west of lot No. 12 in each concession.

2.—The Second Division to consist of the Village of Lanark, and the Townships of Lanark, Dalhousie, Darling, Lavant and North Sherbrooke.

3.—The Third Division to consist of the Town of Carleton Place and the Township of Beckwith, and the first six lots in the first seven concessions of Township of Ramsay.

4.—The Township of Montague, the Town of Smith's Falls, and that part of the Township of North Elmsley, from lot No. 1 to lot No. 12, in each concession, both inclusive, not within the limits of the Town of Smith's Falls.

5.—The Township of Pakenham, the Town of Almonte, and the Township of Ramsay, with the exception of the first six lots in the first seven concessions of the said township.

LEEDS AND GRENVILLE.

J. K. Dowsley, Judge, Brockville.
E. J. Reynolds, J.J., Brockville.
M. M. Brown, C.C.A. and C.P., Brockville.

1.—To consist of the 1st, 2nd, 3rd, 4th, 5th, 6th and 7th concessions and broken front of the Township of Elizabethtown, and the concession roads between them.

2.—To consist of the 1st, 2nd, 3rd, 4th and 5th concessions, and broken front and that part of the 6th, 7th and 8th concessions from the town line of Edwardsburg to lot No. 18, inclusive, of the Township of Augusta, and the concession roads between them.

3.—To consist of the 1st, 2nd, 3rd, 4th and 5th concessions and broken front of the Townships of Leeds and Lansdowne, respectively, and the concession roads between them.

4.—To consist of the Township of South Gower, the Township of Oxford from the west side line of lots No. 11 in all the concessions of the eastern boundary of the township, and the gore of land between South Gower, Oxford and Edwardsburg.

5.—To consist of the Township of Wolford (except the 7th and 8th concessions and the allowances of roads within and between them); lots Nos. 1 to 10, inclusive, in the 2nd, 3rd, 4th, 5th, 6th, 7th and 8th concessions of the Township of Oxford, and allowances of roads within and between them.

6.—To consist of the Townships of Bastard and Burgess, and those parts of the Townships of Leeds and Lansdowne, on the north side of the rear of the 5th concession in each respectively.

7.—To consist of the Townships of Kitley and Elmsley.

8.—To consist of the Townships of North Crosby and South Crosby.

9.—To consist of that part of the Townships of Escott and Yonge, in rear of the 4th concession of Yonge, and in rear of the 6th concession of Escott; that part of the Township of Elizabethtown, in rear of the 7th concession of and west of lot No. 18 in the 8th, 9th, 10th and 11th concessions, and the allowances for roads embraced therein.

10.—To consist of the Township of Edwardsburg.

11.—To consist of that part of the Township of Augusta in rear of the 5th concession and west of lots No. 18 in the 6th, 7th and 8th concessions; the whole of the 9th and 10th concessions of the Township of Augusta; the Gore between the Townships of Oxford, Wolford and Augusta; that part of the Township of Elizabethtown in rear of the 7th concession, and east of the commons, between lots No. 18 and 19 in the 8th, 9th and 10th concession; the 7th and 8th concessions of the Township of Wolford; lots No. 1 to 10, inclusive, in the 9th and 10th concessions of the Township of Oxford; and the allowance for roads embraced therein.

12.—To consist of the 1st, 2nd, 3rd and 4th concessions and broken front of the Township of Yonge; the 1st, 2nd, 3rd, 4th, 5th and 6th concessions and broken front of the Township of Escott, and the allowances for roads embraced therein.

The said 1st, 2nd and 12th divisions shall respectively embrace and comprehend within their lines those portions of the River St. Lawrence and islands therein, within the exterior lines of which such portions of said river and islands would lie and be, if such exterior side lines were produced and extended in that direction to the utmost limits of the Province.

LENNOX AND ADDINGTON.

Jas. H. Madden, Judge, Napanee.

U. M. Wilson, C.C.A. and C.P., Napanee.

1.—The Town of Napanee, Township of Richmond, all that part of North Fredericksburg and Adolphustown lying north of Hay Bay, and all that part of North Fredericksburg lying north of Big Creek.

2.—Comprises 1st concession of Ernestown, the Village of Bath, the Township of Amherst Island, and the 2nd, 3rd and 4th concessions of the said Township of Ernestown, from the west limits thereof to the west limit of lot No. 21 in each concession.

3.—Township of South Fredericksburg and all that part of North Fredericksburg and Adolphustown not included in Division No. 1.

4.—1st, 2nd and 3rd concessions of the Township of Camden and the Village of Newburg.

5.—All that part of the Township of Camden not included in Division No. 4.

6.—All that portion of the Township of Ernestown not included in the limits of Division No. 2.

7.—Township of Sheffield.

8.—Townships of Kaladar, Anglesea and Effingham.

9.—Townships of Abinger, Ashby and Denbigh.

LINCOLN.

J. S. Campbell, Judge, St. Catharines.

M. Brennan, C.C.A. and C.P., St. Catharines.

1.—The Town and Township of Niagara.

2.—The Township of Grantham (including the City of St. Catharines), the Villages of Merritton and Port Dalhousie and the Township of Louth.

3.—The Townships of Caistor and Gainsborough and the 9th concession of the Township of Grimsby, including the 1st and 2nd ranges as part of the said concession.

4.—The Village of Beamsville and the Township of Clinton.

5.—The Village of Grimsby, the Township of North Grimsby, and the Township of South Grimsby, except that portion included in the Third Division.

DISTRICT OF MANITOULIN.

C. E. Hewson, Judge, Gore Bay.

W. F. McRae, C.A., and C.P., Gore Bay.

1.—The Town of Gore Bay, the Townships of Gordon, Allan, Campbell, Mills, Burpee, Robinson, Dawson, The Islands, Barrie, Clapperton and the Duck Islands, and that part of the Township of Billings lying west of the road allowance between lots 15 and 16 in the several concessions thereof, and so much of the Township of Carnarvon as lies west of Lake Mindemoya and north of the line between the 6th and 7th concessions thereof, and Cockburn Island

2.—The Town of Little Current, the Township of Howland and those parts of the Townships of Sheguindah and Bidwell lying north of the line between the 6th and 7th concessions of Sheguindah and the 4th and 7th concessions of the Township of Bidwell, and the 6th and 7th concessions of the line between lots 17 and 18 in the Township of Billings, and the adjacent islands lying north and east of the said Townships, except the Clapperton Island.

3.—Manitowaning, the Townships of Assiginack, Tehkummah and Sandfield, and those parts of the Township of Sheguindah lying south of the line between the 4th and 5th concessions of the Township of Bidwell and 6th and 7th concessions of the Township of Billings to the line between lots 17 and 18 of said township, and the Township of Carnarvon, except so much of the same as lies west of Mindemoya Lake, and all the part of Manitoulin lying east of the Township of Assiginack, Manitowaning and South Bays and the islands adjacent thereto.

MIDDLESEX.

Talbot Macbeth, Judge, London.

J. C. Judd, J.J., London.

J. B. McKillop, C.C.A., and C.P., London.

1.—That part of the City of London lying to the west of Maitland street with that portion of the Township of London lying south of the line between the 4th and 5th concessions and west of the said street, produced northerly on a line in the same direction to the line between the said 4th and 5th concessions, and with that portion of the Township of Westminster lying west of the main road leading south from Clark's Bridge, across the Thames, south to the line between the 1st and 2nd concessions, and westerly to the line between lots 42 and 43, and extending northerly to the River Thames, and also including the Village of London West

2.—The Villages of Parkhill and Ailsa Craig, the Townships of East Williams and West Williams, and that portion of the Township of Lobo lying north of the line between the 11th and 12th concessions, and east of the lines between lots Nos. 12 and 13.

3.—The Townships of McGillivray and Biddulph and the Village of Lucan.

4.—The Township of Delaware, with that portion of the Township of Westminster west of the line between lots 30 and 31 in the 2nd concession, then southerly on the line between lots 20 and 21 to the southerly limit of the township, including all west of said line, and also including all that portion of the front of said Township of Westminster lying west of the line between lots Nos. 42 and 43, not included in the first division, with that portion of the Township of Caradoc lying south of the line between the 5th and 6th concessions to the River Thames, and with that portion of the Township of Lobo lying south of the line between the 6th and 7th concessions, to the River Thames.

5.—The Township of Ekfrid and Mosa, including the Villages of Wardsville, Newbury and Glencoe.

6.—Townships of Adelaide and Metcalfe, the Town of Strathroy, with that portion of the Township of Caradoc lying north of the line between the 3rd and 4th concessions, with that portion of the Township of Lobo which lies north of the 6th concession and west of the line between lots 12 and 13 of the said township.

7.—The Township of North Dorchester, north and south of the River Thames, that portion of the Township of West Nissouri which lies south of the line between lots 14 and 15, and with that portion of the Township of Westminster lying south of the line between the 1st and 2nd concessions and east of the line between lots 30 and 31 in the 2nd concession and thence east of the line between lots 20 and 21, continued south to the southerly limit of the said Township of Westminster.

8.—All that portion of the Township of London which lies north of the line between the 4th and 5th concessions, that portion of the Township of Lobo which lies north of the line between the 6th and 7th concessions, and east of the line between lots 12 and 13 to the line between the 11th and 12th concessions and with all that portion of the Township of West Nissouri which lies north of the line between lots 14 and 15.

9.—All that part of the City of London lying east of Maitland Street; that part of the Township of London, lying south of the line between the 4th and 5th concessions and east to the said street, produced northerly or in a line in the same direction to the line between the said 4th and 5th concessions and that part of the Township of Westminster lying north of the line between the 1st and 2nd concessions, and east of the main road leading south from Clarke's Bridge across the Thames.

DISTRICT OF MUSKOKA.

A. A. Mahaffy, Judge, Bracebridge.

Thomas Johnson, C.A., and C.P., Bracebridge.

1.—The Town of Bracebridge, concessions 1, 2, 3, 4, 5, 6, 7, 8, and 9, in the Townships of Stephenson, Brunel and Franklin, and concessions 7, 8, 9, 10, 11, 12 and 13, in the Townships of Muskoka and Draper, and the Townships of Macauley, McLean, Ridout, Monck, Watt, Cardwell, Freeman, Gibson and Medora, including the Village of Port Carling.

2.—The Town of Gravenhurst, the Townships of Morrison, Ryde, Wood, Oakley and Baxter, and concessions 1, 2, 3, 4, 5 and 6 of the Townships of Muskoka and Draper.

3.—The Town of Huntsville, the Townships of Stisted, Chaffey and Sinclair, and concessions 10, 11, 12, 13 and 14 in the Townships of Stephenson, Brunel and Franklin.

DISTRICT OF NIPISSING.

Jos. A. Valin, Judge, North Bay.

H. D. Leask, J.J., North Bay.

T. E. McKee, C.A., and C.P., North Bay.

1.—To be composed of all that part of the District which is situated west of the line between the Indian Reserve and the Township of Widdifield produced south to the boundary of the District, and north of the north-east angle of the Township of Gooderham, and south of the line marking the northern boundary of the said Township of Gooderham produced west to the boundary of the District.

2.—To be composed of so much of the District as lies east of the line commencing at the north-west angle of the Township of Poitras produced to the south-east angle of the Township of French; the Townships of Olrig and Mattawan, and all that part of the District situated east of the line between the Townships of Bonfield and Calvin, produced to the southerly boundary of the District.

3.—To be composed of the Townships of Widdifield, Phelps, Ferris, Chisholm, Ballantyne, Wilkes, Biggar, Paxton, Butt, Devine, Hunter, McCraney, Finlayson, Peck, and all that part of the District situated west of a line drawn from the south-east angle of the Township of French, produced north to the Ottawa River, thence along the Ottawa River to the south-east angle of the Township of South Lorrain, thence west along the south boundary of South Lorrain to the east boundary of the Township of Cassels, thence north along the east boundary of the Township of Cassels, produced northerly to the northern boundary of the District, thence west along the northern boundary of the District to the western boundary thereof, thence southerly along the western boundary to the north-west angle of the Township of Pardo, thence east along the north boundary of the Township of Pardo, produced to the north-east angle of the Township of Gooderham; thence southerly along the east boundary of the Township of Gooderham, and the said boundary forwarded to the waters of Lake Nipissing.

5.—To be composed of the Townships of Bonfield and Boulter.

NORFOLK.

A. T. Boles, Judge, Simcoe.

T. R. Slaght, C.C.A., and C.P., Simcoe.

1.—The Town of Simcoe, the Gore of the Township of Woodhouse and all that part of said Township lying west of the side line between lots 5 and 6, together with that part of the 4th, 5th and 6th concessions lying west of the said line between lots 12 and 13.

2.—The Township of Townsend and the Village of Waterford.

3.—The Township of Windham.

4.—The Township of Middleton and the Village of Delhi.

5.—The Township of Charlotteville.

6.—The Townships of North Walsingham, South Walsingham and the Village of Port Rowan.

7.—The Township of Houghton.

8.—The Village of Port Dover, and that part of the Township of Woodhouse not included in Division 1, viz.: all that part of the 1st, 2nd and 3rd concession lying east of the side line between lots 5 and 6, and that part of the 4th, 5th and 6th concessions lying east of the said line, between lots 12 and 13 in said township.

NORTHUMBERLAND AND DURHAM.

H. A. Ward, Judge, Port Hope.
G. M. Roger, J.J., Cobourg.
W. F. Kerr, C.C.A. and C.P., Cobourg.
1.—Townships of Cartwright and Darlington and the Town of Bowmanville.
2.—Township of Clarke and Village of Newcastle.
3.—Township of Hope and Town of Port Hope.
4.—Townships of Cavan, Manvers, South Monaghan and Village of Millbrook.
5.—Township of Hamilton and Town of Cobourg.
6.—Townships of Haldimand and Alnwick.
7.—Township of Cramahe and Village of Colborne.
8.—Township of Brighton and Village of Brighton.
9.—Township of Percy and Village of Hastings.
10.—Township of Murray.
11.—Township of Seymour and Village of Campbellford.

ONTARIO.

T. A. MacGillivray, Judge, Whitby.
R. Ruddy, J.J., Whitby.
J. E. Farewell, C.C.A. and C.P., Whitby.
1.—Including the Townships of Whitby and East Whitby and the Towns of Whitby and Oshawa.
2.—The Township of Pickering.
3.—The Townships of Reach and Scugog and the Village of Port Perry.
4.—The Townships of Uxbridge and Scott and the Town of Uxbridge.
5.—The Township of Brock and the Village of Cannington.
6.—The Township of Thorah and Village of Beaverton.
7.—The Townships of Mara and Rama.

OXFORD.

J. G. Wallace, Judge, Woodstock.
R. N. Ball, C.C.A., and C.P., Woodstock.
1.—Comprising the City of Woodstock, the Township of East Oxford, and that part of the Township of East Zorra, lying south of the line between lots number twenty-five and twenty-six of the Township of Blandford, and that part of the Township of North Oxford lying east and north of the road between lots 16 and 17 to the boundary of the Township line between North and West Oxford, and that part of the Township of West Oxford lying east of the road betwen lots 6 and 7 to the boundary of the Township of East Oxford, and that part of the Township of Blandford lying south of the 10th concession.

2.—Comprises the Township of Blenheim.
3.—Comprises the Township of East Nissouri and West Zorra and the Village of Embro.
4.—Comprises the Townships of North Norwich and South Norwich and the Village of Norwich.
5.—Comprises the Town of Ingersoll and that part of the Township of North Oxford lying west and south of the road between lots No. 16 and 17 of the Township

of West Oxford, and that part of the Township of West Oxford lying south of the road between lots 6 and 7 to the line between West Oxford and East Oxford, and those portions of the Township of Dereham being part of the 1st concession of the said Township of Dereham, west of the Middle Town Line.

6.—Comprises the Town of Tillsonburg and that part of the Township of Dereham not included in the Fifth Division.

7.—Comprising the Village of Tavistock and that part of the Township of East Zorra, north of the road between lots 25 and 26, and that part of the Township of Blandford lying north of the 10th concession of the said Township.

DISTRICT OF PARRY SOUND.

F. R. Powell, Judge, Parry Sound.
W. L. Haight, C.A. and C.P., Parry Sound.

1.—The Town of Parry Sound and the Townships of Foley, McDougall, Cowper and Carling, and all that portion of the district lying to the west of the east boundary of Carling, produced to the French River.

2.—The Townships of McKellar, Ferguson, Hagerman, Croft, and all that portion of the district lying between the east boundary of Ferrie and the west boundary of Ferguson, produced to the French River.

3.—The Townships of Humphrey, Christie, Monteith and Conger.

4.—Townships of McMurrich, Perry, Armour, Proudfoot and Bethune.

5.—Townships of Spence, Chapman, Ryerson and Lount.

6.—That territory bounded on the west by the western boundaries of the Townships of Pringle and Patterson, and the western boundary of the Township of Patterson, produced to the French River and Lake Nipissing; on the east by the boundary of the District of Parry Sound, and on the south by the southern boundaries of the Townships of Himsworth, Gurd and Pringle.

7.—The Townships of Machar, Laurier, Strong and Joly.

PEEL.

B. F. Justin, Judge, Brampton.
W. S. Morphy, C.C.A. and C.P., Brampton.

1.—Township of Brampton, Township of Chinguacousy and northern division of the Township of Toronto Gore.

2.—Village of Streetsville, Township of Toronto and southern division of the Township of Toronto Gore.

3.—Township of Caledon.

4.—Village of Bolton, Township of Albion.

PERTH.

J. A. Barron, Judge, Stratford.
G. G. McPherson, C.C.A., and C.P., Stratford.

1.—To consist of all that part of the Township of North Easthope west of the line between lots 25 and 26, and south of the road between the 8th and 9th concessions, and all that part of the Township of South Easthope west of the side line between lots 25 and 26; all that part of the Townships of Downie and Gore

north and east of the concession line between the 10th and 11th concessions and the Oxford Road; and all the Township of Ellice from the 1st to 13th concession, inclusive.

2.—To consist of all that part of the Township of Fullarton not included in Division No. 3, and the Townships of Hibbert and Logan.

3.—To consist of that portion of the Township of Downie west of the Oxford Road, and south of the concession line between the 10th and 11th concessions; the Township of Blanshard; all that part of the Township of Fullarton comprising the 13th and 14th concessions, and south of a road leading from Mitchell Road, between lots 24 and 25, east of lots 3 in the 10th concession; thence east along the line between the 10th and 11th concessions to the town line.

4.—To consist of that part of the Township of North Easthope east of the line between lots 25 and 26, and the north of the 8th concession, inclusive, with the 9th and 10th concessions; all that part of the Township of South Easthope not included in Division 1.

5.—To consist of the Township of Mornington, and all that part of the Township of Elma from lots 13 to 72, both numbers inclusive, of the 1st concession, and from lots 27 to 16, both numbers inclusive, in and from the 2nd to the 18th concession, both concessions inclusive, of the said Township of Elma; and concessions 14, 15 and 16 of the Township of Ellice; and concessions 11, 12, 13 and 14 of the Township of North Easthope.

6.—To consist of the Township of Wallace and all that part of the Township of Elma from the 1st concession to the 18th concession, both concessions inclusive, and comprising lots Nos. 1 to 52, both inclusive, of the 1st concession, and lots Nos. 1 to 26 inclusive, from the 2nd to the 18th concession, both concessions inclusive.

PETERBOROUGH.

E. C. S. Huycke, Judge, Peterborough.

G. W. Hatton, C.C.A., and C.P., Peterborough.

1.—Shall comprise the City of Peterborough, the Townships of North Monaghan and Ennismore, all the Township of Smith lying south of the 7th concession, all that part of the Township of Otonabee lying west of the 8th concession and north of lots Nos. 21 and all that part of the Township of Douro lying south of lots numbered 11.

2.—Shall comprise the Village of Norwood, the Township of Asphodel, and all that part of the Township of Dummer lying east of the 5th concession and that part of the said Township of Dummer lying west of the 6th concession and south of lots numbered 11.

3.—Shall comprise that part of the Township of Smith lying north of the 6th concession, all that part of the Township of Douro lying north of lots numbered 10, that part of the Township of Dummer lying west of the 6th concession and north of lots numbered 10, the Township of Galway, the Township of Harvey and the Village of Lakefield.

4.—Shall comprise the Townships of Anstruther, Burleigh, Cavendish and Chandos.

5.—Shall comprise the Townships of Belmont and Methuen and the Village of Havelock.

6.—Shall comprise the Township of Otonabee, except that part thereof lying west of the 8th concession and north of lots numbered 21.

PRESCOTT AND RUSSELL.

A. Constantineau, Judge, L'Orignal.
C. G. O'Brian, J.J., L'Orignal.
J. Maxwell, C.C.A., and C.P., L'Orignal.

1.—Comprises the whole of the Township of Longueuil, the municipality of the Village of L'Orignal, and the 1st concession of the Township of Caledonia.

2.—Comprising all that part of the Township of West Hawkesbury, extending from front of 3rd concession to the rear of the said township.

3.—Comprises the whole of the Township of East Hawkesbury.

4.—Comprising the Township of North Plantagenet, and that part of the Township of South Plantagenet lying north of the Nation River.

5.—Comprising the whole of the Township of Cumberland.

6.—Comprising the whole of the Township of Russell.

7.—Comprising the two front concessions of the Township of West Hawkesbury, and the Municipality of Hawkesbury Village, within the same.

8.—Comprising the Township of Caledonia (excepting the 1st concession of the said township), and also that portion of the Township of South Plantagenet lying south and east of the Nation River.

9.—Comprising the whole of the Township of Alfred.

10.—Comprising the whole of the Township of Clarence.

11.—Comprising the whole of the Township of Cambridge.

PRINCE EDWARD.

D. Morrison, Judge, Picton.
R. H. Hubbs, C.C.A., and C.P., Picton.

1.—The Town of Picton, the 2nd and 3rd concessions of "Military Tract" from the west line of No. 13 eastward; Gore "G"; 1st and 2nd concessions north of the Carrying Place, 1st concession southeast of the Carrying Place, and 2nd concession north of Black River, including Gores "K" and "L" and McCan Gores, all in the Township of Hallowell; Block "I" in the concession north and east of East Lake, and Gore "B" in the Township of Athol, and 1st and 2nd concessions south of the Bay of Quinte, and Gore "A" in the Township of North Marysburg, and 1st concession southwest of Green Point to the end of Carman's Point in Sophiasburg.

2.—The Township of South Marysburg, and the Southern part of Athol, commencing at the outlet of East Lake, thence down to the head of the Lake, thence down to the base line between the 1st concession south and the 1st concession north of East Lake, till it strikes the township line of Hallowell, thence down said township line till it strikes South Marysburg.

3.—The Township of Sophiasburg, together with Big Island, excepting the 1st concession southwest of Green point to the end of Carman's Point.

4.—All that part of the Township of Ameliasburg lying east of the line between lots 86 and 87, in the 1st, 2nd, 3rd and 4th concessions of said township, including Huff's Island.

5.—That part of the Township of Hillier not included in the 7th division, also the 1st and 2nd concessions north of West Lake, and west of lot No. 7 in the said concession, and that part of Irwin Gore lying north and west of lot No. 7 in the 2nd concession and the west part of the 2nd concession produced west of lot No. 74 in that concession in the Township of Hallowell.

6.—Block (IV.) four, concession south side of West Lake, 1st concession "Military Tract," 2nd and 3rd concessions of said tract west of Lots No. 13, in those concessions, "Gore E," 1st and 2nd concessions north of West Lake, and east of lot No. 6 in those concessions; the Gerrow Gore and that part of Irwin Gore not included in Division No. 8, and all that part of the 2nd concession produced east of lot No. 75 in the Township of Hallowell.

7.—All that part of the Township of Ameliasburg lying west of the line between lots No. 86 and 87, in the 1st, 2nd, 3rd and 4th concessions of said township; all that part of the 4th and 5th concessions of the Township of Hillier west of the line between lots 86 and 87 and the 3rd concession west of the line between lots No. 22 and 23, with that part of the 2nd concession lying North of Pleasant Bay in the said Township of Hillier.

8.—All the point lying east of the west line of Marshland's Gore, the concession lying North of Smith's Bay and Waupoos Island in the Township of North Marysburg.

DISTRICT OF RAINY RIVER.

A. Maclennan, Judge, Fort Frances.
N. L. Croome, C.C.A. and C.P., Fort Frances.

1.—To comprise all that part of the said District lying east of the east boundaries of the Townships of Aylesworth, Lash, Carpenter, Kingsford and Fleming, and east of the east boundary of the said Township of Fleming produced north to the north boundary of the said District.

2.—To comprise all that part of the said District lying west of Division No. 1 and east of the east boundaries of the Townships of Morley, Morley Additional, Pattullo, Sifton and Dewart, and east of a line drawn north astronomically from the northeast angle of the said Township of Dewart to the north boundary of the said District.

3.—To comprise all that part of the said District lying west of Division No. 2.

RENFREW.

J. M. McNamara, Judge, Pembroke.
A. A. Fisher, J.J., Pembroke.
J. H. Burritt, C.C.A., and C.P., Pembroke.

1.—Comprising the Town of Pembroke, the Townships of Pembroke, Stafford, Alice, Petawawa, Buchan, Rolph, Wylie, McKay, Fraser, Herd, Clara and Maria, and all that part of the Township of Wilberforce from the 18th to the 25th concessions, both inclusive, and also those parts of the 14th, 15th, 16th and 17th concessions of the same Township of Wilberforce lying north of Snake River and east of Lake Dore.

2.—Comprising all that part of the Township of Westmeath lying east and north of the Muskrat Lake and River, and all those parts of the Township of Ross, from the 5th to the 9th concessions, both inclusive, east of Muskrat Lake, and from the 7th to the 13th (of the other) concessions, both inclusive, of the said Township of Ross.

3.—Comprising the Town of Renfrew and the Townships of Horton, Admaston, Bagot, Blythfield, Brougham and Matawachan, in the said County of Renfrew.

4.—Comprising the Village of Arnprior and the Township of McNab.

5.—Comprising the Townships of Grattan, Sebastopol, South Algoma, North Algoma, and all that part of the Township of Wilberforce, from the 1st to the 17th concessions, both inclusive, excepting those parts of the 14th, 15th, 16th and 17th concessions of said Township of Wilberforce lying north of Snake River and east of Lake Dore.

6.—Comprising the Township of Bromley, and all that part of the Township of Westmeath west of Muskrat Lake, and all those parts of the Township of Ross, from the 1st to the 14th concessions, both inclusive, of the said Township of Ross.

7.—Comprising the Townships of Brudenell, Radcliffe, Raglan, Lynedoch, Griffith, Hagarty, Sherwood, Jones, Richards and Burns.

SIMCOE.

G. N. Vance, Judge, Barrie.
E. A. Wismer, J.J., Barrie.
J. R. Cotter, C.C.A., and C.P., Barrie.

1.—Comprising the Town of Barrie, the Township of Vespra, except that portion lying west of the Nottawasaga River, and excepting also lots Nos. 38, 39 and 40, in the 1st and 2nd concessions, and lots Nos. 1, 2 and 3 in the 3rd, 4th, 5th, 6th and 7th concessions respectively. That portion of the Township of Oro lying south of lots Nos. 21 in the 1st and 2nd concessions (including the ranges), and south of lots Nos. 13 in the 3rd, 4th, 5th, 6th, 7th and 8th concessions respectively; that portion of the Township of Innisfil lying east of lots Nos. 5 in the 6th, 7th and 8th concessions, and that portion lying north of the 8th concession; that portion of the Township of Essa lying north of lots Nos. 19 in the 7th, 8th, 9th, 10th and 11th concessions.

2.—The Village of Bradford, the Township of West Gwillimbury, excepting thereout lots Nos. 1, 2, 3, 4 and 5 in the 14th and 15th concessions; the Township of Innisfil, excepting that portion lying north of the 5th concession, and excepting also lots Nos. 1, 2, 3, 4, and 5 in the 1st, 2nd, 3rd, 4th and 5th concessions thereof.

3.—The Township of Tecumseh, excepting concessions 12, 13, 14 and 15; the Township of Adjala, excepting that portion lying north of lot No. 25 in the 8th concession thereof.

4.—The Town of Collingwood, the Village of Stayner, that portion of the Township of Nottawasaga lying north of lot No. 18 in the 12th concession thereof; that portion of the Township of Sunnidale lying north of the 8th concession; that portion of the Township of Floss lying west of the Nottawasaga River; the islands in Lake Huron contiguous to the Township of Nottawasaga.

5.—The Township of Floss, except that portion lying west of the Nottawasaga River; the Township of Medonte, except that portion lying east of the 10th concession and north of lots Nos. 10 in the 9th and 10th concessions respectively; that portion of the Township of Oro lying north of the southern boundaries of lots Nos. 21 in the 1st and 2nd concessions, and north of the southern boundaries of lots Nos. 13 in the 3rd, 4th, 5th, 6th, 7th and 8th concessions respectively; lots 38, 39 and 40 in the 1st and 3rd concessions, and lots Nos. 1, 2 and 3 in the 3rd, 4th, 5th, 6th and 7th concessions of the Township of Vespra.

6.—The Town of Orillia, the Township of Orillia, southern division, the Township of Orillia, northern division, except that portion lying north of lots Nos. 15 in the first seven concessions thereof; that portion of the Township of Oro lying east of the 8th concession; that portion of the Township of Medonte, being composed of

lots Nos. 1 to 6 (both inclusive) in the 11th, 12th, 13th, and 14th concessions; the islands in Lake Simcoe contiguous to the townships and portions of townships above described lying wholly or for the most part opposite thereto.

7.—The Township of Nottawasaga, except that portion lying north of lot No. 18 in the 12th concession thereof; the township of Sunnidale, except that portion lying north of the 8th concession; that portion of the Township of Vespra lying west of the Nottawasaga River; that portion of the Township of Essa lying north of lots 19 in the 1st, 2nd, 3rd, 4th, 5th and 6th concessions; that portion of the Township of Tossorontio lying north of lots Nos. 20 in each of the seven concessions thereof.

8.—The Township of Essa, except that portion lying north of lots Nos. 19 in each of the eleven concessions thereof; the Township of Tossorontio, except that portion lying north of lots Nos. 20 in each of the seven concessions thereof; that portion of the Township of Innisfil, being composed of lots Nos. 1, 2, 3, 4 and 5 in the 1st, 2nd, 3rd, 4th, 5th, 6th, 7th and 8th concessions; the 12th, 13th, 14th and 15th concessions of the Township of Tecumseh; lots Nos. 1, 2, 3, 4 and 5 in the 14th and 15th concessions of the Township of West Gwillimbury; that portion of the Township of Adjala lying north of lots Nos. 25 in the eight concessions thereof.

9.—The Town of Penetanguishene and the Village of Midland, the Township of Tiny; that portion of the Township of Tay lying west of the 8th concession; the islands in Lake Huron contiguous to the Township of Tiny, and to that part of the Township of Tay, forming part of the 9th division, and lying wholly and for the most part opposite thereto.

10.—The Township of Matchedash, that portion of the Township of Orillia, northern division, lying north of lots Nos. 15, in the first seven concessions thereof; that portion of the Township of Medonte lying north of lots Nos. 6, in the 11th, 12th, 13th and 14th concessions, and that portion lying north of lots Nos. 10, in the 9th and 10th concessions thereof; the Township of Tay, except that portion lying west of the 8th concession; the island in Lake Huron, contiguous to that portion of the Township of Tay, forming part of the 10th division, and lying wholly or for the most part opposite thereto.

NOTE.—Each of the said several divisions shall include all allowances for roads embraced within its external limits, and shall also extend to the centre of every allowance for road lying external and adjacent to every such division, excepting always where any such last-mentioned allowance is hereinbefore declared to belong to or form part of any particular division.

STORMONT, DUNDAS AND GLENGARRY.

J. R. O'Reilly, Judge, Cornwall.
J. W. Liddell, J.J., Cornwall.
J. G. Harkness, C.C.A. and C.P., Cornwall.

1.—Township of Charlottenburg, in the County of Glengarry.
2.—Township of Lochiel, in the County of Glengarry.
3.—Township of Cornwall, in the County of Stormont.
4.—Township of Osnabruck, in the County of Stormont.
5.—Township of Williamsburg, in the County of Dundas.
6.—Township of Matilda, in the County of Dundas.
7.—Township of Mountain, in the County of Dundas.

8.—Township of Finch, in the County of Stormont.
9.—Township of Lancaster, in the County of Glengarry.
10.—Township of Winchester, in the County of Dundas.
11.—Township of Roxborough, in the County of Stormont.
12.—Township of Kenyon, in the County of Glengarry.

SUDBURY.

J. J. Kehoe, Judge, Sudbury.
G. M. Miller, C. A. and C.P., Sudbury. (Acting.)

1.—To comprise so much of the District not included in Division No. 4, as lies east of a line commencing at the south-west angle of Township No. 82 produced north to the north-west angle of the Township of Fairbank, thence east to the south-east angle of the Township of Rayside, thence north to the north-east angle of the Township of Kitchener, and so much of the District as lies north of the line drawn from the north-east angle of the Township of Kitchener, produced to the south-west angle of the Township of Botha, thence north to the north-west angle of said Township, and produced to the western boundary of the District, and all the territory lying east of a line produced north from the boundary of the District, between Townships Nos. 16 and 17 produced to the south-east angle of the Township of Shenango, thence west to the south-west angle of said Township, thence north to the boundary of the District.

2.—So much of the District as lies south of a line produced easterly from the south-west angle of the Township of Forks to the north-west angle of the Township of Botha, thence to the southern boundary of said Township, thence east to the north-east angle of the Township of Kitchener, thence south to the south-east angle of the Township of Rayside, thence west to the boundary of the District.

3.—So much of the District as lies west of a line produced north from the south-west angle of Township No. 82 to the north-west angle of the Township of Fairbank, thence west to the boundary of the said District.

4.—So much of the District as lies east of a line between Townships of Allen and Bigwood produced north to the northern boundary of the District.

5.—So much of the District as lies west of a line drawn from the north-east angle of the Township of Shenango and produced to the southern boundary of the District, excepting said Township.

DISTRICT OF TEMISKAMING.

H. Hartman, Judge, Haileybury.
F. L. Smiley, C.A. and C.P., Haileybury.

1.—To be composed of that portion of the District lying south of the northerly boundary of the Townships of Klock, Barr, Firstbrook, and Bucke, and east of the line between the Townships of Van Nostrand and Klock, produced southerly to the boundary of the District.

2.—To be composed of the Townships of Cane, Henwood, Kerns, Harley, Casey, Auld, Lundy, Hudson, Dymond, Harris, Hilliard and Brethour including the Town of New Liskeard.

3.—So much of the District that lies north of the northern boundary of the Townships of Cane, Henwood, Kerns, Hilliard and Brethour and east of the

boundary line between the Townships of Tudhope and Bryce, produced northerly to the north-west angle of the Township of Bernhardt, thence east to the boundary of the District.

4.—So much of the District as lies south of the southerly boundary of the Township of Langmuir produced easterly to the north-west angle of the Township of Bernhardt and west of the line between the Township of Maisonville and Bernhardt, produced southerly to the southern boundary of the District.

5.—So much of the District as lies west of a line produced north from the south-east angle of the Township of Geikie to the north-east angle of the Township of Douglas, thence east to the south-east angle of the Township of Blackstock, thence north to the north-east angle of the Township of German, thence west to the north-west angle of said Township, thence north to the north-east angle of Evelyn, thence west along the northern boundary of said Township, thence north to the north-east angle of the Township of Duff, thence west to the boundary of the District.

6.—So much of the District as lies north of the southern boundary of the Township of Kirkland produced east and west to the boundary of the District.

7.—So much of the District as lies north of a line drawn from the south-west angle of the Township of Timmins to the eastern boundary of the District and east of a line produced north from the south-west angle of said Township to the north-west angle of the Township of Stock, thence west to the south-west angle of the Township of Dundonald, thence north to the north-west angle of said Township, thence west to the south-west angle of the Township of Little, thence north to the north-west angle of the Township of Mann.

THUNDER BAY DISTRICT.

H. H. O'Leary, Judge, Port Arthur.
Jno. McKay, J.J., Port Arthur.
W. F. Langworthy, C.A., and C.P., Port Arthur.

1.—All that part of the district lying west of the meridian of 87 degrees of west longitude, to the meridian of the most easterly part of Hunter's Island, excepting therefrom the Municipality of Neebing.

3.—Comprising the Municipality of Neebing.

VICTORIA.

W. D. Swayze, Judge, Lindsay.
H. McMillan, J.J., Lindsay.
T. H. Stinson, C.C.A. and C.P., Lindsay.

1.—The first consists of the following townships and parts of townships, viz.: Of the 15th concession of the Township of Mariposa, and the Township of Eldon, except the ranges north and south of the Portage Road.

2.—All the Township of Fenelon, except that portion lying east of the Scugog River, and south of Sturgeon Lake, and the Township of Somerville.

3.—The Township of Verulam.

4.—The Township of Emily.

5.—The Town of Lindsay, Townships of Ops, and that portion of the Township of Fenelon, lying east of the Scugog River, and south of Sturgeon Lake.

6.—The Township of Mariposa, except the 15th concession.

7.—The Townships of Carden and Dalton, Laxton, Digby and Longford, and the Township of Bexley, and that portion of the Township of Eldon north of Portage Road, and the range south of Portage Road.

WATERLOO.

C. R. Hanning, Judge, Kitchener.

W. M. Reade, J.J., Kitchener.

D. S. Bowlby, C.C. A., and C.P., Kitchener.

1.—All that portion of the Township of Waterloo lying north of Blockline on the west side of the Grand River and that part of the upper block of said township lying north of said township lying on the east side of the Grand River, north of lots Nos. 115, 109, 104, 86 and 95, to the Guelph Township line, including the Towns of Kitchener and Waterloo.

2.—All that part of the Township of Waterloo lying south of the Blockline on the west side of the Grand River, and that part lying on the east side of the Grand River, south of the northern boundary of lots Nos. 115, 109, 104, 85 and 95, to the Guelph Township line, including the Villages of Preston and Hespeler.

3.—All that portion of the Township of North Dumfries lying east of lot No. 19 in the 7th concession, and running a course with eastern boundary of the said lot in a northerly direction up to the 12th concession; thence along the eastern boundary of lot No. 23, in the said 12th concession, to the township line, including the Town of Galt.

4.—The Township of Wilmot, including the Village of New Hamburg.

5.—The Township of Wellesley.

6.—The Township of Woolwich.

7.—All that part of the Township of North Dumfries lying west of the eastern boundary of said lot No. 19, in the 7th concession; thence along the eastern limits of the said lot No. 19, the same course thereof, in a northerly direction to the 15th concession; thence along the westerly limit of lot No. 23, in the said 12th concession to the township line, including the Village of Ayr.

WELLAND.

L. B. C. Livingstone, Judge, Welland.

T. D. Cowper, C.C.A., and C.P., Welland.

1.—The Township of Crowland; that part of the Township of Thorold lying south of the lines between lots 178 and 195, running through to Pelham; that part of Pelham lying south of the 4th concession, and that part of Humberstone lying north of the concession line, between the 4th and 5th concessions, being the whole of the 15th concession and the Town of Welland.

2.—The Township of Wainfleet.

3.—The Township of Bertie, and those parts of the Township of Humberstone not included in Nos. 1 and 6, and the Village of Fort Erie.

4.—The Township of Willoughby, the Village of Chippawa, and that part of the Township of Stamford south of the line between lots 136 and 137; easterly from the westerly limit of the township to the southeast angle of lot No. 133; thence north on the line between lots Nos. 132 and 133, to the northern boundary of the township, including the towns of Clifton and Navy Island.

5.—Those parts of the Township of Stamford, Thorold and Pelham not included in any other division, and the Town of Thorold.

6.—All the Township of Humberstone lying south of the 5th concession, and west of the side lines between lots Nos. 9 and 10, in the several other concessions thereof, and the Village of Port Colborne.

WELLINGTON.

L. M. Hayes, Judge, Guelph.
A. Spotton, J.J., Guelph.
A. H. Macdonald, C.C.A., and C.P., Guelph.

1.—The Town and Township of Guelph.
2.—The Township of Puslinch.
3.—The Township of Eramosa.
4.—The Township of Nichol, excepting the 11th and 12th concessions; the Municipality of Fergus; the first eight concessions of the Township of Garafraxa; and lots 1 to 18, both inclusive, in concessions A and B of the Township of Peel; lots 13, 14, 15, 16, 17 and 18, in concessions 18 and 19, and lots 19, 20 and 21 in the 17th concession of the Township of Peel.
5.—The Township of Erin.
6.—The Township of Pilkington, and the 11th and 12th concessions of the Township of Nichol; the Municipality of the Village of Elora, and lots Nos. 19 and upwards belonging to the 9th, 10th, 11th, 12th, 13th, 14th, 15th and 16th concessions of Peel.
7.—Concessions 1 to 16, inclusive, of the Township of Maryboro' and concessions 1 to 16, inclusive, of the Township of Peel, except lots 19, 20, 21, 22 and 23 of those concessions in that township.
8.—That part of the Township of Arthur south and southeast of lot 15, on the west side of the Owen Sound Road, in the Township of Arthur; that part of the Township of Luther from 1 to 16, both inclusive; and lots 1 to 12, both inclusive, of the 17th and 18th concessions of the Township of Peel; lots 5 to 11, both inclusive, of the 19th concession of said Township of Peel; and lots 19 to 23, both inclusive, of concessions A and B of said Township of Peel.
10.—The Township of Minto.
11.—The Town of Mount Forest, and that part of the Township of Arthur north of lot 16, west of the Owen Sound Road; lot 17, on the Owen Sound Road, and lot 13, east of the Owen Sound Road.

WENTWORTH.

C. G. Snider, Judge, Hamilton.
J. F. Monck, J.J., Hamilton.
S. F. Washington, C.C.A., and C.P., Hamilton.

1.—All that part of the Township of Barton lying east of the lines between lots 14 and 15, and all that part of Hamilton City east of Hughson street.
2.—The whole of the Township of Flamboro' West, the Town of Dundas, and the east half of the Township of Ancaster.
3.—The whole of the Township of Flamboro' East.
4.—The whole of the Township of Beverly and the west half of the Township of Ancaster.
5.—The whole of the Township of Saltfleet.

7.—The whole of the Township of Glanford.

8.—The whole of the Township of Binbrook.

9.—All that part of the Township of Barton lying west of the lines between lots 14 and 15, and that part of Hamilton City west of Hughson street.

YORK.

John Winchester, Judge, Toronto.
E. Coatsworth, J.J., Toronto.
F. M. Morson, J.J., Toronto.
J. H. Denton, J.J.
R. H. Greer, C.C.A., Toronto.
H. E. Irwin, C.P., Toronto.
Toronto City.—Crown Attorney, J. W. Seymour Corley.

1.—The City of Toronto east of Yonge street, at date 14th September, 1875 (i.e., Bloor, Sherbourne and Howard streets on the north, the Don on the east, down to Queen street, and south of Queen street as far as Lee avenue).

2.—Concessions 5 to 11, inclusive, of the Township of Markham, and concessions 5 to 10, inclusive, of the Township of Whitchurch, from 1 to 10, inclusive, together with the Villages of Markham and Stouffville.

3.—Concessions 1 to 4, inclusive, of the Township of Markham, and concessions 1 to 4, inclusive, of the Township of Whitchurch, from lots 1 to 10, inclusive, and concessions 1 to 3, inclusive, of the Township of Vaughan.

4.—The Township of Whitchurch, from the line between lots 10 and 11 northward; and the Township of East Gwillimbury.

5.—The Townships of Georgina and North Gwillimbury.

6.—The Township of King and the incorporated Village of Aurora.

7.—Concessions 4 to 11, inclusive, of the Township of Vaughan.

8.—All that portion of the Township of York lying west of Yonge street, and the Township of Etobicoke.

9.—Township of Scarboro' and all that portion of the Township of York which lies east of Yonge street and the Village of Leslieville.

10.—The City of Toronto, west of Yonge Street, at date of 10th September, 1875 (i.e., Bloor street on the north and Dufferin street on the west).

DIVISION COURT TARIFF.

Form I.

1.—CLERK'S FEES.

1. Receiving claim, numbering and entering in procedure book ..... (This item to apply to entering in the procedure books a transcript of judgment from another Court but not an entry made for the issue of a judgment summons.)	$0 25
2. Issuing summons, with necessary notices and warnings thereon, or judgment summons (as provided in forms) in all.	
Where claim exceeds $10 and does not exceed $20	50
Where claim exceeds $20 and does not exceed $60	60
Where claim exceeds $60 and does not exceed $100	80
Where claim exceeds $100 ..... (N.B.—In replevin and interpleader suits the value of goods to regulate the fee.)	1 50
3. Copy of summons, including all notices and warnings thereon	25
4. Copy of claim (including particulars), when not furnished by plaintiff..	25
5. Copy of set-off or counterclaim or notice of defence (including particulars), when not furnished by defendant ..... (Note.—In either of the last two preceding items the fee may be taxed against the party ordered to pay costs.)	25
6. Receiving and entering bailiff's return to any summons, writ or warrant issued under the seal of the Court (except summons to witness and return to summons or paper from another division)	15
7. Taking confession of judgment ..... (This does not include affidavit and oath, chargeable under item 8.)	10
8. Every necessary affidavit, if actually prepared by the clerk, and administering oath to the deponent	25
9. Furnishing duly certified copies of the summons and notices and papers with all proceedings, for purposes of appeal, as required by either party, per folio of 100 words	05
10. Certificate therewith	25
11. Certifying under seal of the Court and delivering to a judgment creditor a memorandum of the amount of judgment and costs against a judgment debtor, or garnishee, under The Creditor's Relief Act, or for any other purpose	25
12. Copies of papers, for which no fee is otherwise provided, necessarily required for service or transmission to the Judge, each	10
If exceeding two folios, per folio	05
13. Every notice of defence or admission entered, or other notice required to be given by the Clerk to any party to a cause or proceeding, including mailing, but not postage.	15
14. Entering final judgment by Clerk, on special summons, where claim not disputed.	
Where claim does not exceed $60	50
Where claim exceeds $60	75

15. Entering every judgment rendered at the hearing, or final order made by the Judge.
Where claim does not exceed $60 50
Where claim exceeds $60 75

(Note.—This fee does not apply to any proceeding on judgment summons.)

(These fees will include the service of recording at the trial and afterwards entering in the procedure book the judgment, decree and order in its entirety, rendered or made at the trial. If a garnishee proceeding before judgment, these fees will be allowed for the judgment in respect to the primary debtor, and like fees for the adjudication, whenever made, in respect to the garnishee.)

16. Subpœna to witness 25

(The subpœna may include any number of names therein and only one original subpœna shall be taxed, unless the Judge otherwise orders.)

17. For every copy of subpœna required for service 10

18. Summons for jury (including copy for each juryman), when required by parties 1 25

19. Calling and returning jury ordered by the Judge 25

20. Every order of reference, or order for adjournment, made at hearing, and every order requiring the signature of the Judge, and entering the same, including final order on judgment debtor's examination.. 25

(Any warning necessary with order forms part of the order.)

21. Transcript of judgment to another Division Court 50

22. Every writ of execution, warrant of attachment, or warrant of commitment, and delivering same to bailiff.
Where claim does not exceed $60 50
Where claim exceeds $60 and does not exceed $100 75
Where claim exceeds $100 ..... 1 00

23. Renewal of every summons or writ of execution, when ordered by the judgment creditor, or warrant of commitment, when ordered by judge 25

24. Every bond, when necessary, and prepared by the Clerk (including affidavits of justification and of execution) 1 00

25. Transmitting transcript of judgment; or transmitting papers for service to another division; or to the Judge, on application to him, including necessary entries and mailing, but not including postage 25

26. Receiving papers from another division for service, entering the same, handling to the bailiff, receiving and entering his return and transmitting the same (if return made promptly, not otherwise) 30

27. Search by a person not a party to the suit or proceeding to be paid by the applicant 10
Search by a party to the suit or proceeding, where the suit or proceeding is over one year old 10

(No fee is chargeable for search to a party to the suit or proceeding, if the same is not over one year old.)

28. Taxing costs, in defended suits, after judgment pronounced 25

29. Making out statement of costs in detail (including bailiff's fees) at the request of any party 10

(Neither item 28 nor 29 applies to statement of costs endorsed on summons or copy to be served.)

30. Taxing bailiff's costs, under section 178 of the Division Courts Act ... 25
31. Every necessary letter written to any party to any cause, matter or proceeding in the court 15

(A letter shall not be considered necessary when a notice contains the same information.)

2.—BAILIFF'S FEES.

1. Service of summons issued under the seal of the Court, or Judge's summons or order on each person, except summons to witness and summons to juryman:

Where claim exceeds $10 and does not exceed $20 ..... $0 40
Where claim exceeds $20 and does not exceed $60 50
Where claim exceeds $60 and does not exceed $100 75
Where claim exceeds $100 ..... 1 00

(In interpleader suits the value of the goods to regulate the fee.)

2. For every return as to service under item 1; attending at the clerk's office and making the necessary affidavit 15
3. Service of summons on witness or juryman, or service of notice 25
4. Taking confession of judgment and attending to prove 10
5. For calling parties and their witnesses at the sitting of the court in every defended case, and at the hearing of every judgment summons. 15
6. Enforcing every writ of execution or summons of replevin, or warrant of attachment or warrant against the body, each:

Where claim does not exceed $20 65
Where claim exceeds $20 and does not exceed $60 ..... 1 00
Where claim exceeds $60 ..... 1 50

(Where goods replevied, the value of goods to regulate the amount of the fee. This fee does not include service of summons in replevin on defendant.)

Fees under Creditor's Relief Act (see section 188 of 10 Edw., cap. 32; and section 26 of R.S.O. cap. 48, 9 Edw. VII.) shall be taxed according to the tariff.

7. Every mile or fraction of a mile necessarily travelled to serve summons, or process, or other necessary papers, or in going to seize on a writ of execution, where money, paid on demand, or made on execution, or case settled after seizure 15
8. Mileage going to arrest under warrant, when arrest made, per mile or fraction of a mile 15
9. Mileage carrying delinquent to prison, including all expenses and assistance, per mile, or fraction of a mile 25
10. Every schedule of property seized, attached, or replevied, including affidavit of appraisal, when necessary:

Exceeding $10 and not exceeding $20 30
Exceeding $20 and not exceeding $60 50
Exceeding $60 75

11. Every bond, when necessary, when prepared by the bailiff, including affidavit of justification and execution 1 00
12. Every notice of sale, not exceeding three, under execution, or under attachment, each 25
13. Reasonable allowances and disbursements, necessarily incurred in the care and removal of property:
    (*a*) If a bailiff removes property seized, he is entitled to the necessary disbursements, in addition to the fees for seizure and mileage.
    (*b*) If he takes a bond, then to $1.00 instead of disbursements for removal of property.
    (*c*) If assistance is necessary in the seizure, or securing, or retaining of property, the bailiff is entitled to the disbursements for such assistance.
    (*d*) All charges for disbursements are to be submitted to the clerk for taxation, subject to appeal to the Judge.
    (*e*) The bailiff must in all cases endorse a memorandum of all his charges on the back of the execution, or state them on a separate slip of paper, so that the clerk may conveniently tax the bailiff's charges for fees and disbursements.
    (*f*) The Clerk in all cases to sign the memorandum of his taxation and preserve it among the papers in the cause, together with the execution, for future reference, and thereby enable the clerk to certify the bailiff's returns properly.
14. If execution or process in attachment in the nature of execution be satisfied in whole or in part, after seizure and before sale, whether by action of the parties or otherwise, the bailiff shall be entitled to charge and receive 3 per cent. on the amount directed to be levied; or on the amount of the value of the property seized, whichever shall be the lesser amount.
15. Poundage on executions, and on attachments in the nature of executions, 5 per cent., exclusive of mileage for going to seize and sell, upon the amount realized from property necessarily sold.

3.—FEES TO WITNESSES AND APPRAISERS.

Allowances to Witness.

Attendance, per diem, to witnesses within three miles of the place where the Court is held, if within the county $0 75
And if without the county 1 00
Attendance, if witness resides over three miles from the place of sittings and within the county, per diem 1 00
Attendance, if witness resides without the county and more than three miles of the place of sittings, per diem 1 50
Barristers and solicitors, physicians and surgeons, engineers and veterinary surgeons, other than parties to the cause, when called upon to give evidence of any professional service rendered by them, or to give professional opinions, per diem 4 00

(Note.—Disbursements to surveyors, architects and professional witnesses, such as are entitled to specific fees, by statute, are to be taxed, as authorized by such statute.

If witnesses attend in one case only, they will be entitled to the full allowance.

If they attend in more than one case, they will be entitled to a proportional part in each case only.)

The travelling expenses of witnesses, over three miles, shall be allowed according to the sums reasonably and actually paid, but in no case shall exceed 20 cents per mile, one way.

FEES OF APPRAISERS.

Fees to Appraisers of Goods, etc., seized under Warrant of Attachment.

To each appraiser, $1.00 per day, during the time actually employed in appraising goods—to be paid in the first instance by plaintiff and allowed as costs in the cause.

FEES IN SUITS NOT EXCEEDING $10.

(Section 48, D.C. Act.)

Clerk.

For all services, from entering action, or suing out a judgment or interpleader summons, up to and including the entering of final judgment, or final order on any such judgment or summons, in case the action proceeds to judgment or final order $1 25

In case the action does not proceed to judgment or final order, the fees heretofore, or that may hereafter be payable, but not exceeding in the whole the said sum.

For issuing writ of execution, warrant of attachment, or warrant for arrest of delinquent and entering the return thereto 50

Bailiff.

For all services rendered in serving summons and making return, and any other service that may be necessary before the judgment is entered by the clerk or pronounced by the Judge, mileage excepted 50

For enforcing execution, schedule of property seized, or attached, bond where necessary, and all other necessary acts done by him, after seizure, mileage excepted, if money made or case settled, after levy 1 00

(Necessary disbursements incurred in the care and removal of property shall be allowed to be first allowed by the clerk, subject to the approval of the Judge.)

REPORT

OF THE

Inspector of Legal Offices

ONTARIO

1916

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO;

Printed by A. T. WILGRESS, Printer to the King's Most Excellent Majesty

1917

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

To His Honour Sir John Strathearn Hendrie, K.C.M.G., C.V.O., a Colonel in the Militia of Canada, etc., etc., etc.

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned begs respectfully to present to Your Honour the Thirty-fourth Annual Report of the Inspector of Legal Offices for the year ending 31st day of December 1916.

I. B. Lucas,

Attorney-General.

Toronto, March 22nd, 1917.

REPORT

OF THE

Inspector of Legal Offices

ONTARIO, 1916

To His Honour Sir John Strathearn Hendrie, K.C.M.G., C.V.O., a Colonel in the Militia of Canada, etc., etc., etc.,

Lieutenant-Governor of the Province of Ontario.

Sir,—I have the honour to present the Thirty-fourth Annual Report of the Inspector of Legal Offices upon the affairs of the Judicial Offices of the Province for the year ending December 31st, 1916.

A list of officers appointed during the year, with the date of the publication of each appointment in the *Ontario Gazette,* will be found in Appendix "L" to this Report.

Sheriffs.

Nineteen Sheriffs had incomes less than $1,500. These are entitled, under the Statute 4 Geo. V., chapter 21, section 4, to be paid out of the Consolidated Revenue Fund sums sufficient to make their incomes for the year $1,500.

The income of one Sheriff only was in excess of $6,500. In this case 90 per cent. of the excess was paid to the Provincial Treasurer, pursuant to Section 5 of the *Public Officers' Fees Act.*

Sheriffs frequently submit questions affecting their rights to collect poundage. Whether or not a Sheriff is entitled to his poundage will depend upon the circumstances in each particular case, as well as the legal decisions of which there are many, and for this reason I have not deemed it proper to express *ex parte* opinions in answer to such questions.

In an ordinary case the rules provide that if a Sheriff has seized the debtor's goods, but for any reason does not sell, he is entitled to his poundage (See Con. Rules 686 and 687), and the onus is on the execution creditor of shewing that the Sheriff should have less than the full amount. But as I have said much will depend upon the circumstances of each particular case. When in doubt the Sheriff's safest course will be to act upon the advice of his solicitor.

Under Tariff Items 18 and 19, of Tariff C., to the Consolidated Rules of Practice, one dollar is the fee for search and certificate as to executions against one debtor, and this irrespective of the number of writs of execution in the hands of the Sheriff against such debtor.

At a meeting of the Ontario Sheriffs' Association, held in March of last year, Mr. R. J. Maclennan, solicitor and secretary for the Association, read a paper containing the Statutes and the more important cases relating to Sheriff's Poundage. This paper has proved to be of so much value to Sheriffs that at their request, and with Mr. Maclennan's consent, I am including it as Appendix "M" to this report, with the hope that Sheriffs will preserve it for future use and reference.

Appendix "A" sets out in tabulated form the Statistical Returns of the Sheriffs for the year 1916.

Local Masters.

Since the passing of 6 Geo. V., Cap. 30, "*An Act to Amend the Mechanics' and Wage Earners' Lien Act,*" assented to 27th April, 1916, Mechanics' Lien Actions may not be tried by a Local Master, and all fees in respect to Mechanics' Lien Actions are to be paid in law stamps.

The amount of business transacted in the offices of the Local Masters during the year was not large.

In most cases the offices are held by the County or District Judge.

In Appendix "B" I have set out in tabular form the returns made by the Local Masters of their business for the year 1916.

Local Registrars, Deputy Registrars, Deputy Clerks of the Crown, County and District Court Clerks.

The duties of these officers were generally well performed, and their books carefully kept.

Some, however, neglected my instructions to cancel law stamps for searches made of Supreme Court papers for the Mercantile agencies, and in some offices law stamps representing the fee for entry of Supreme Court Actions had not been affixed to the præcipe.

I find it necessary to again call the attention of Local Registrars to the following:—

All actions must be entered for trial not later than the sixth day before the commencement of the Sittings. Rule 248 (c).

Immediately after the list is closed they should send to the Justice who is to take the Sittings, addressed to him at Osgoode Hall, Toronto, a list of the Actions, Civil and Criminal (the latter to be obtained from Crown Attorney), to be tried at such Sittings, with a statement of the nature of each, and whether it is to be with or without a jury.

Rule 263 (1) must be strictly complied with, and when forwarding papers to Toronto the list of exhibits must accompany them.

Immediately after each Sittings of the Supreme Court, Local Registrars should forward by post prepaid to Toronto, addressed to "The Registrar's Office, Osgoode Hall, Toronto," every recognizance, indictment, paper or proceeding in any criminal matter in their custody, and also the usual and proper returns as Marshal and Clerk of the Assize.

Frequent complaints have been made to me during the past year of the neglect of several of the officers in these important matters.

Judgments must be entered, not fyled, and the original Judgment may be taken away after entry by the Solicitor.

Records, however, must remain in the office, and should not be allowed to be taken away after the action has been disposed of.

Executions are issued on præcipe. It is not the proper practice to treat the judgment as a præcipe for this purpose.

Since the passing of 6 Geo. V., cap. 30, all Mechanics' Lien actions, outside of the County of York, must to tried before a Judge of the County or District

Court of the County or District in which the land is situate, and the fees provided by Section 3 are to be paid in law stamps and affixed to the Statements of Claim. By circular letter dated May 2nd, 1916, I notified the officers of this change in the law.

Fifty cents, not one dollar, is now the fee to be charged in law stamps for a Certificate of Lis Pendens. The former fee of 50 cents for seal of Court ceased to be payable on September 1st, 1913, the date of the coming into force of the present Consolidated Rules of Practice—See 3 and 4 Geo. V., Cap. 19, Sec. 103.

Appendix "C" is a return of the business of the High Court Division of the Supreme Court of Ontario in the offices of the Local Registrars, Deputy Registrars, and Deputy Clerks of the Crown; while Appendix "D" is a return of the business in the offices of the Clerks of the County and District Courts, for the year 1916.

Surrogate Registrars.

New Surrogate Court Rules, including Tariffs of fees and costs, framed by the Board of County Judges, and approved by the Judges of the Supreme Court of Ontario, came into force on September 1st, 1916. Bound copies of these rules I sent to the Judges and Registrars of the Surrogate Courts of the Province.

It is to be observed that form 18, the Oath of Administrator, and Form 17, the Oath of Administrator-with-will, make no mention of the domicile of deceased at the time of his death. In view of Rule 2, and of the fact that Form 4, the application for Administration, includes mention of the domicile, it is thought the words "And who had at the time of his death his fixed place of abode at..... in the County ....." may be inserted before the word "died" in the fourth line of Clause 2 of Form 18 and at the end of the sixth line in Clause 2 of Form 17, in order the better to comply with Section 35 of the Surrogate Courts Act.

The Inventories, Forms 11 and 12, differ from those of the former Rules, in that they do not include an affidavit in verification thereof, and require merely the signature of the applicant. Most Judges, however, insist that the Inventories be marked as exhibits and signed by the Commissioner, before whom the oath of the executor, or of the Administrator, is sworn.

When application is made for the re-sealing of a "Testament Testamentar," a Notarial Copy of the "Testament Testamentar" must be fyled in the Surrogate Registrar's office, and the original when re-sealed is returned. If accompanied by a copy of the Will it will be necessary to fyle a Notarial copy of the Will also.

For the practice in connection with applications for "Cessate" Grants, I have referred the Registrars to page 174 of Tristram and Coote's Probate Practice, First Canadian Edition, (1907), and to the 15th English Edition (1915). It would seem to be sufficient in such cases to fyle the application, inventories, Executor's oath and Succession Duties affidavits. The Original Will on fyle in the Surrogate office should be marked by the executor, as the practice now appears to be to mark the Will and not the Probate first issued. Notice should be given to the Provincial Treasurer as in the case of other applications, and the usual fee charged, except of course the fee on the value of the property, such fee having been collected when Probate was first granted.

Tariff item 11 of Tariff A refers to Personal Estate only—The fee of ten cents a folio in item 13 includes the Certificate. There is no additional fee for Certificate on the copy of will required to be sent to the Surrogate Clerk's Office in Toronto.

I am sometimes asked by solicitors to state the proper practice when it is desired to pass the accounts in an estate before the Surrogate Judge. I have replied that the accounts verified by affidavit, and an application to pass the accounts, must be fyled with the Surrogate Registrar before an appointment is applied for from the Surrogate Judge. The Judge's appointment to pass accounts with the proof of its service upon the proper parties is fyled later, usually just before the Judge issues his order on passing. It is necessary, however, that the Surrogate Registrar be advised of the date mentioned in the appointment that he may be prepared to attend on the reference. The order on passing accounts must be in duplicate and the law stamps affixed to the copy left with the Registrar.

The following circular letter was sent to Surrogate Registrars:—

Osgoode Hall, Toronto, 21st Dec., 1916.

Office of the Inspector of Legal Offices.

Dear Sir,—Attention has been directed to the manner in which the Surrogate fees or allowances have been paid to the Judges.

I therefore beg to draw to your attention the fact that these allowances are on a yearly basis; and I am instructed to inform you that in future in making payments to the Judges you are not in any case to exceed the proportion of the yearly allowance, which has been earned to the date of payment.

Where there is an Order-in-Council in favour of any Judge other than the Surrogate Judge, no payments may be made to such Judge until there are fees on hand sufficient to provide for the whole yearly allowance payable to the Surrogate Judge.

All allowances to Judges in respect of the Surrogate fees are to be paid by the Surrogate Registrar to the Judge or Judges, as the case may be, and the excess only, with statement thereof, is to be transmitted by cheque through this office, to the Provincial Treasurer.

Yours truly,

Jas. W. Mallon,

Inspector.

Law stamps aggregating $135.80 were missing from Surrogate papers. These I caused to be affixed and cancelled.

In a few instances Guardian bonds had not been copied.

In one office the fees collected on the passing of accounts had not been entered in the Fee Book.

Appendix "E" gives in tabulated form the business of the Surrogate Courts for the year 1916.

County and District Crown Attorneys and Clerks of the Peace.

Much difficulty has been experienced by certain of the Crown Attorneys in enforcing the provisions of the Order-in-Council in respect to Fines passed September 30th, 1915. In some cases Police Magistrates and Justices of the Peace prefer to be guided by the Municipal Authorities, rather than by the Crown officer, whose

duty it is to advise them in such matters. Where Magistrates will not comply with the provisions of this order, their neglect of duty should be immediately reported to the Hon. the Attorney General.

I am frequently in receipt of letters from Crown Attorneys, asking for instructions as to just what fines belong to the Province, especially where by-laws covering criminal offences have been passed by Municipalities. The following letters would seem to cover the law with regard to the collection of fines:—

To a Crown Attorney:

The fines referred to in your letter clearly come within the provisions of the Code, and I am not aware that a Provincial Statute, much less a Town by-law, may supersede the provisions of a Dominion Statute in Criminal matters.

Section 1036 (as amended by 8 and 9 Edward VII., cap. 9) and the Revised Statutes of Ontario Cap. 99, leave no doubt as to how fines must be disposed of.

Your truly,

To a Crown Attorney:

I have your letter of the 21st inst.

Fines under Dominion and Provincial Statutes belong to the Province—Of course there are exceptions. You will have to read the different Statutes. See 1036 of the Code (as amended by 8 and 9, Ed. VII., cap. 9), and Revised Statutes of Ontario, cap. 99 show how the fines are to be paid over.

Ordinary municipal by-laws, not covering offences specified by the Code, such as failure to remove snow from the sidewalks, etc., may be paid to the municipality.

Yours truly,

To a Crown Attorney:

I have your letter of the 15th inst. I do not think it necessary, in order to comply with the provisions of the Order-in-Council of September 30, that you should attend the Police Court for such purpose.

You receive the quarterly returns of their Convictions from Police Magistrates and Justices of the Peace, and if they will not comply with instructions they should be reported.

Sec. 1036 of the Code (as amended by 8 and 9 Edw. VII., cap. 9) and the Revised Statutes of Ontario Cap. 99, leave no doubt as to the disposition of fines.

Some Statutes provide for payment to a person other than the Crown Attorney, e.g. *The Ontario Temperance Act,* which requires the fines to be paid by the Magistrate to the License Inspector. It is the duty of the Crown Attorney, however, when perusing and entering the Quarterly returns to see that the provisions of the Statutes have been complied with.

To a Crown Attorney:

Replying to your letter of the 2nd inst. I may say that I think the view of the Magistrate is the correct one. Vagrants are liable on summary conviction to a fine, or to imprisonment, or to both. See Code Sec. 239; and apparently Magistrates are not obliged to transmit the papers to the Clerk of the Peace in cases under Part XV, except where there is an appeal to the Sessions under Sec. 749.

For cases in which the Magistrate is required to transmit the papers to the Clerk of the Peace, see Code Secs. 695, 749, 793 and any others.

By the Revised Statutes of Ontario, Cap. 87, Sec. 29, and Section 1133 of the Code, Magistrates are required to make quarterly returns to the Clerk of the Peace in the form set out in Schedules to the Statute.

Yours truly,

To a Crown Attorney:

I have your letter in which you state that Jas. B., a Justice of the Peace, will not pay over fines to you, the property of the Province, and that Jno. W. M., of K., will not answer letters written in respect of fines.

I think it is your duty, in view of the Order-in-Council, to report the neglect of these Magistrates to the Hon. the Attorney General.

Perhaps the better way will be for you to write each of them again, and if they fail then send me a report, which I will forward to the Attorney General.

Yours truly,

On instructions from the Department of the Honourable Attorney General, I have sent the following circular letter to all of the Crown Attorneys of the Province:

Office of the Inspector of Legal Offices.

Osgoode Hall, Toronto, February 5th, 1917.

Dear Sir,—I am instructed to call your attention to the fact that under Subsection 10 of Section 37 of the *Power Commission Act* as amended by Section 10 of Chapter 19, 6 George V., the penalties imposed by the Section must be paid over to the Hydro Electric Power Commission.

In supervising the collection of fines in your County, please see that these provisions are complied with.

Yours truly,

General Remarks,

On receipt from the Hon. Mr. Justice Middleton of the following directions I caused to be furnished to the Clerk-in-Chambers, Osgoode Hall, copies of the Orders of the Master-in-Ordinary issued during 1916:—

Osgoode Hall, 25th September, 1916.

All orders made by the Master-in-Ordinary under Rule 433 shall be entered in the office of the Master-in-Chambers.

The charge of ten cents per folio for the entry of order shall only be made where orders are entered in full.

Orders made in Chambers dismissing actions shall be entered as orders and not as Judgments.

W. R. Meredith,
C. J. O.
W. E. Middleton, J.
H. T. Kelly, J.

In many cases the vault accommodation is quite inadequate for the needs of the County.

The sums paid by the officers in respect of their incomes for the year, under R.S.O., Chapter 17, amounted to $34,843.47 as follows:—

Local Registrars and Deputy Clerks of the Crown	$26,848.83
Crown Attorneys and Clerks of the Peace	2,952.15
Sheriffs	5,042.49

Appendix "F" is a statement of the fees and emoluments of the officers for the year ending December 31st, 1916, and of the sources from which they derive their income.

In Appendix "G" I have set out the more important business of the High Court Division of the Supreme Court of Ontario, transacted at Toronto, during the year 1916, compiled from statements received from the officers at Osgoode Hall.

Appendix "H" shows the number of actions tried, or otherwise disposed of, by the Justices of the High Court Division, and of the Divisional Courts of the Appellate Division, of the Supreme Court of Ontario, and the disposition thereof, during the year 1916; while Appendix "J" shows the Criminal business of the High Court Division of the Supreme Court of Ontario at its sittings throughout the Province for the same period.

Appendix "I" is a statement of the business transacted in the office of the Surrogate Clerk, at Osgoode Hall, for the year 1916.

Appendix "K" shows in tabulated form the business of the Courts of General Sessions of the Peace, and of the County and District Court Judge's Criminal Courts of the Province for the same period.

I have the honour to be,

Sir,

Your obedient servant,

JAS. W. MALLON,

Inspector.

Osgoode Hall, March 21st, 1917.

APPENDIX A.—Containing in tabulated form Statistics as returned

Counties or Districts.	Number of writs of summons received for service		Number of subpœnas received for service in—				Number of orders for arrest.		Number of other process.		Total process received.	
			Criminal Cases.		Civil Cases.							
	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.
Algoma	56	55	9	20	2	1	.....	1	26	17	93	93
Brant	15	50	11	50	5	1	.....	.....	11	6	42	107
Bruce	10	16	1	23	6	.....	.....	.....	3	6	20	45
Carleton	198	197	12	18	4	2	.....	1	45	15	259	233
Dufferin	3	11	4	3	.....	.....	.....	.....	1	.....	8	14
Elgin	12	33	2	.....	1	1	.....	.....	.....	.....	26	34
Essex	86	63	4	20	13	6	1	1	39	11	143	141
Frontenac	19	30	3	9	21	1	.....	.....	9	9	33	49
Grey	13	17	2	9	.....	.....	.....	.....	.....	3	15	29
Haldimand	10	12	.....	46	.....	2	.....	.....	.....	.....	10	60
Halton	11	17	.....	5	.....	.....	.....	.....	2	.....	13	22
Hastings	22	50	1	31	5	.....	.....	.....	7	2	35	83
Huron	13	32	1	11	.....	1	.....	.....	1	10	15	54
Kenora	5	13	3	.....	3	.....	2	.....	6	1	19	14
Kent	18	71	3	24	.....	.....	.....	.....	10	1	31	96
Lambton	14	19	1	11	.....	.....	.....	1	4	.....	19	31
Lanark	12	21	1	8	.....	.....	.....	.....	2	2	15	31
Leeds and Grenville	15	30	4	26	.....	.....	.....	.....	6	9	25	65
Lennox and Addington	9	18	1	4	1	3	.....	.....	2	2	13	27
Lincoln	34	58	1	15	2	1	.....	.....	11	6	48	80
Manitoulin	1	1	1	.....	.....	.....	.....	.....	.....	.....	2	1
Middlesex	62	78	8	23	8	2	1	.....	14	21	93	124
Muskoka	4	13	11	34	.....	.....	.....	.....	.....	.....	15	47
Nipissing	8	19	2	10	.....	.....	.....	.....	.....	.....	10	29
Norfolk	5	19	1	8	.....	.....	.....	.....	5	.....	11	27
Northumberland and Durham	21	30	4	14	2	.....	.....	.....	8	1	35	45
Ontario	19	12	2	10	1	1	.....	.....	4	1	26	24
Oxford	7	37	2	1	4	.....	.....	2	17	3	30	43
Parry Sound	12	28	2	10	1	2	.....	.....	18	1	32	42
Peel	13	22	2	.....	.....	1	.....	.....	3	7	18	30
Perth	17	30	3	5	1	1	.....	.....	2	6	23	42
Peterborough	26	30	9	16	2	4	.....	.....	14	2	51	52
Prescott and Russell	7	20	1	1	.....	.....	.....	.....	.....	.....	.....	2
Prince Edward	7	19	2	.....	.....	.....	.....	.....	3	4	12	23
Rainy River	43	35	20	31	1	.....	.....	.....	3	1	67	67
Renfrew	17	31	1	1	1	1	.....	.....	1	2	20	35
Simcoe	15	20	8	3	.....	.....	.....	.....	10	.....	33	23
Stormont, Dundas and Glengarry	16	44	3	1	.....	1	.....	1	9	4	28	51
Sudbury	42	138	37	141	8	2	.....	.....	9	14	96	295
Temiskaming	25	64	1	14	11	2	.....	.....	19	15	56	95
Thunder Bay	56	65	5	9	2	3	.....	.....	16	2	79	79
Victoria	8	15	1	.....	.....	1	.....	.....	1	3	10	19
Waterloo	36	63	13	12	3	.....	5	.....	8	9	65	84
Welland	42	56	4	37	2	4	.....	.....	3	5	51	102
Wellington	18	22	2	3	2	.....	.....	.....	4	1	26	26
Wentworth	118	180	2	78	17	13	.....	.....	46	26	183	297
York	48	62	.....	354	1	2	.....	21	18	8	67	447
Toronto	965	750	37	29	47	22	.....	.....	404	109	1,453	910
Totals	2,233	2,716	248	1,178	177	81	9	28	824	345	3,474	4,369

by the different Sheriffs for the year ending 31st December, 1916.

Number of persons served.		Estreats received.		Number of jurors summoned.		Number of writs of execution received.			Number of renewals of writs of execution against— Goods and Lands.		
S.C.	C.C.	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.	D.C.	S.C.	C.C.	D.C.
166	168	.....	.....	122	86	18	31	7	5	15	13
42	111	.....	.....	122	122	9	32	25	1	2	.....
18	72	.....	2	122	122	10	17	16	2	4	.....
475	324	.....	1	219	122	95	183	46	17	25	.....
45	26	.....	.....	122	122	.....	7	8	.....	1	.....
23	37	.....	.....	122	122	12	30	15	6	6	2
177	193	.....	.....	122	122	33	64	41	9	6	.....
39	60	.....	.....	122	98	11	17	11	2	4	.....
22	59	.....	.....	122	122	12	29	.....	.....	.....	1
29	77	.....	.....	122	218	2	17	7	.....	1	.....
19	31	.....	.....	122	98	19	15	10	5	4	.....
53	230	.....	.....	122	122	5	33	19	10	9	8
15	103	.....	1	122	122	9	24	6	1	3	.....
41	18	.....	.....	114	108	10	16	1	1	3	.....
30	179	.....	.....	122	118	11	78	16	.....	.....	.....
25	64	.....	.....	122	122	10	33	11	1	3	.....
23	58	.....	.....	113	112	7	13	8	1	.....	.....
44	175	.....	.....	122	218	16	30	6	1	1	.....
28	45	.....	.....	94	68	3	13	5	.....	1	.....
70	123	.....	.....	122	98	20	46	16	.....	.....	.....
2	1	.....	.....	61	122	.....	2	.....	.....	.....	.....
163	216	.....	.....	183	122	26	76	30	1	.....	.....
.....	.....	.....	.....	122	122	3	12	1	.....	.....	.....
21	50	.....	.....	129	104	17	35	7	1	.....	.....
22	55	.....	.....	122	122	4	15	19	.....	.....	.....
58	90	.....	.....	122	122	13	22	15	6	3	.....
32	65	.....	.....	122	122	10	22	6	2	3	.....
35	55	.....	.....	122	122	12	19	28	.....	1	.....
49	68	.....	.....	96	88	7	18	6	2	4	.....
21	31	.....	.....	122	122	9	17	5	3	3	.....
37	68	.....	.....	122	122	18	39	10	2	1	.....
163	162	.....	.....	122	122	10	38	13	.....	.....	.....
13	32	.....	.....	244	244	3	23	7	.....	.....	.....
19	32	.....	.....	122	122	1	5	2	.....	.....	.....
83	72	.....	.....	122	122	17	32	3	1	.....	.....
28	68	.....	.....	146	122	12	42	8	6	.....	.....
28	62	.....	.....	106	106	16	49	36	.....	2	.....
48	75	.....	.....	165	98	14	30	11	7	2	.....
84	268	.....	.....	135	98	11	106	15	1	.....	.....
102	131	.....	14	123	99	33	145	54	.....	.....	.....
146	206	.....	.....	135	136	78	143	68	10	44	10
11	19	.....	.....	98	98	2	11	5	.....	1	.....
105	162	.....	.....	121	120	19	77	8	3	3	.....
58	268	.....	.....	122	122	17	67	30	.....	1	.....
19	26	.....	.....	122	122	12	28	11	4	.....	.....
280	594	.....	1	183	244	43	115	48	8	23	.....
75	1,922	.....	2	.....	332	109	99	37	11	9	.....
2,740	1,121	.....	.....	219	.....	466	760	153	126	140	.....
5,826	8,072		21	6,100	6,039	1,294	2,775	910	256	328	34

APPENDIX A.—Containing in tabulated form Statistics as returned by the

Counties or Districts.	Number of renewals of writs of execution against—					Number of writs of possession received		Number of writs Ca. Sa.	
	Lands only.			Goods only.					
	S.C.	C.C.	D.C.	S.C.	C.C.	S.C.	C.C.	S.C.	C.C.
Algoma	1					2	2		
Brant			1		2	2	1		
Bruce			5			1			
Carleton			4			10	3		
Dufferin			3			1			
Elgin			1			1	1		
Essex			2			3	3		
Frontenac			1			2			
Grey									
Haldimand									
Halton									
Hastings			2				1		
Huron			3						
Kenora							1		
Kent									
Lambton			5				1		
Lanark			2			1			
Leeds and Grenville									
Lennox and Addington						2	2		
Lincoln			1			3			
Manitoulin									
Middlesex			2			6			
Muskoka									
Nipissing						1	1		
Norfolk						1			
Northumberland and Durham			10			2	2		
Ontario			1				2		
Oxford									
Parry Sound			3		5	1			
Peel			3			1			
Perth									
Peterborough						2			
Prescott and Russell									
Prince Edward									
Rainy River							2		
Renfrew			2						
Simcoe			1			1			
Stormont, Dundas and Glengarry						1			
Sudbury							7		
Temiskaming			4						
Thunder Bay			10			3			
Victoria				2					
Waterloo			3						
Welland						1	1		
Wellington									
Wentworth			11			1			
York			9			10			
Toronto			28			82	11		
Totals	1		117	2	7	141	41		

different Sheriffs for the year ending 31st December, 1916.—*Continued.*

Number of sales under writs of execution of					Seizures under writs of execution where no subsequent sale.			Number of Attendances to seize where no goods found.		Writs of execution on which money realized.			Cases under Creditors' Relief Act.	Certificates received under Creditors' Relief Act.
Goods.		Lands.												
S.C.	C.C.	S.C.	C.C.	D.C.	S.C.	C.C.	D.C.	S.C.	C.C.	S.C.	C.C.	D.C.		
1	2	1	.....	.....	1	1	.....	.....	1	1	8	....	2	....
.....	.....	.....	.....	.....	2	6	.....	.....	.....	1	7	2	....	....
2	1	.....	.....	1	5	4	.....	.....	.....	4	3	2	1	....
.....	1	.....	1	.....	12	56	.....	2	34	1	42	1	1	....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	1	....	2	....
.....	1	.....	.....	.....	1	2	.....	.....	.....	1	9	2	....	....
1	.....	.....	1	.....	10	26	.....	3	1	8	27	6	12	14
.....	1	.....	.....	.....	.....	1	.....	.....	2	....	5	3	2	2
1	.....	.....	.....	1	8	8	.....	4	12	1	7	1	2	14
.....	.....	1	.....	.....	.....	6	.....	.....	4	1	9	2	....	....
.....	.....	.....	.....	.....	2	4	.....	4	2	1	7	6	1	2
.....	1	.....	.....	1	1	4	1	.....	6	....	12	2	2	....
1	1	1	.....	.....	2	5	.....	1	.....	4	6	1	3	16
.....	.....	.....	3	.....	2	.....	.....	.....	.....	1	1	....	....	....
1	1	.....	.....	.....	1	13	.....	.....	.....	1	32	....	2	4
1	1	.....	.....	1	2	12	.....	1	3	3	6	3	4	2
.....	.....	1	.....	.....	4	5	.....	1	3	....	7	....	1	1
1	1	.....	.....	.....	2	22	2	3	2	2	23	2	....	....
.....	1	.....	.....	.....	.....	3	.....	.....	3	....	1	....	1	4
.....	1	.....	.....	.....	7	14	.....	2	2	1	5	....	10	....
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	....	3	....	....	....
.....	2	.....	.....	.....	.....	10	.....	.....	7	....	....	....	....	....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....
.....	3	.....	.....	.....	1	5	.....	.....	4	2	7	....	1	1
.....	.....	.....	.....	.....	.....	3	1	.....	.....	....	4	....	....	....
1	2	1	.....	.....	1	2	.....	8	3	1	5	....	4	....
.....	.....	.....	.....	1	2	5	.....	6	11	....	5	....	1	....
.....	.....	.....	.....	.....	2	.....	.....	2	4	2	5	....	2	1
.....	.....	.....	.....	.....	.....	1	.....	.....	4	1	20	....	....	....
1	.....	.....	.....	.....	1	.....	.....	1	7	1	2	....	1	6
1	.....	.....	.....	.....	6	11	.....	.....	1	7	15	6	2	....
.....	.....	.....	1	.....	.....	12	.....	.....	.....	....	11	....	....	....
.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1	6	2	....	....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	7	1	2	....
.....	1	.....	.....	1	1	3	.....	3	5	4	15	1	2	16
.....	3	.....	.....	.....	1	6	.....	.....	.....	....	13	....	1	....
.....	2	.....	1	.....	10	3	.....	7	6	....	....	....	1	....
2	.....	.....	.....	1	3	15	.....	1	1	2	13	2	2	5
1	1	.....	1	.....	2	33	.....	.....	.....	2	22	....	....	2
2	7	.....	2	1	2	17	.....	1	2	2	29	....	6	21
1	5	.....	1	.....	6	29	3	6	14	7	34	4	15	32
.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	4	....	....	....
.....	1	.....	1	.....	3	16	.....	2	13	2	22	5	1	1
2	4	.....	.....	.....	4	15	2	1	3	5	18	2	4	4
1	.....	.....	.....	.....	1	6	.....	.....	.....	1	4	....	2	14
1	1	.....	.....	.....	9	38	.....	2	13	6	23	....	2	....
.....	2	1	.....	.....	9	21	.....	9	20	52	12	....	54	....
11	12	1	1	.....	.....	.....	.....	.....	.....	44	100	10	44	21
33	60	7	13	8	126	444	9	70	196	174	617	66	193	183

APPENDIX A.—Containing in tabulated form Statistics as returned by the

Counties or Districts.	Assignments made to Sheriff under R.S.O, cap. 134.	Returns received under R.S.O. cap 266, sec. 37.	Sales of Lands under R.S.O. cap. 266, sec. 37.	Amount endorsed on Writs of Execution (not renewals). For debt or damages S.C.	C.C.	Div. Co.	For costs taxed. S.C.	C.C.	Div. C.
				$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Algoma	....	4	....	24,087 51	9,932 82	769 61	1,036 38	885 26	76 01
Brant	....	....	....	34,386 60	8,241 76	2,409 15	272 85	1,030 20	1,495 79
Bruce	....	....	....	31,675 43	5,030 59	1,622 19	1,061 27	470 01	187 62
Carleton	....	....	....	216,465 45	52,818 37	4,903 06	4,454 65	5,845 93	318 12
Dufferin	....	....	....	.....	1,460 78	446 01	.....	103 39	33 31
Elgin	3	....	....	15,484 10	8,636 72	1,604 27	183 69	718 54	65 68
Essex	3	....	....	31,935 83	16,833 55	3,804 76	6,468 72	2,918 93	287 45
Frontenac	....	....	....	11,301 40	2,432 19	561 47	569 76	739 90	21 44
Grey	....	....	1	8,399 30	8,644 51	1,189 90	1,050 96	850 22	102 44
Haldimand	....	....	....	921 52	5,335 07	703 74	31 80	346 91	24 13
Halton	....	....	....	39,622 83	3,925 81	927 84	703 18	335 56	48 43
Hastings	4	....	....	2,672 72	11,285 09	1,630 29	709 78	1,033 24	111 84
Huron	....	....	....	8,707 39	10,752 35	580 99	1,185 36	614 29	31 12
Kenora	....	2	....	8,679 28	4,791 24	99 10	246 90	648 43	9 90
Kent	....	1	....	10,434 94	19,896 81	800 69	740 14	2,913 66	59 26
Lambton	....	....	....	24,175 43	8,659 42	1,608 02	671 37	1,547 56	100 96
Lanark	....	....	....	14,042 22	4,238 20	567 80	409 13	303 54	29 07
Leeds & Grenville	....	....	....	35,976 46	6,888 55	780 97	848 29	515 58	39 94
Lennox & Addington	9	....	....	2,831 88	3,453 39	491 55	40 20	431 72	84 05
Lincoln	1	....	....	44,697 67	16,844 20	1,419 60	1,377 67	930 62	95 93
Manitoulin	....	....	....	.....	1,037 34	.....	.....	101 00	.....
Middlesex	....	....	....	56,269 17	20,052 71	1,963 44	1,758 79	3,318 20	432 31
Muskoka	1	....	....	3,772 40	2,874 59	37 31	93 39	362 49	.....
Nipissing	....	....	....	16,112 67	10,831 47	834 85	825 35	1,321 39	32 54
Norfolk	....	....	....	7,747 38	4,092 44	1,736 95	109 20	353 13	104 54
Northumberland and Durham	1	....	....	21,360 25	7,674 50	1,689 53	261 11	1,147 57	88 67
Ontario	4	....	....	10,177 74	6,325 97	550 59	258 58	538 11	53 89
Oxford	....	....	....	46,601 49	5,414 95	2,424 72	1,316 64	490 64	208 53
Parry Sound	....	17	1	11,870 87	5,821 77	547 83	237 99	487 62	45 32
Peel	....	....	....	17,222 74	5,708 69	499 80	214 90	722 41	27 47
Perth	....	....	....	19,872 43	11,918 24	1,049 67	630 90	1,268 27	72 36
Peterborough	....	....	....	14,452 54	13,509 27	1,148 65	1,168 26	1,085 43	111 67
Prescott & Russell	....	....	....	4,182 06	6,296 64	863 73	172 32	516 10	97 32
Prince Edward	....	....	....	2,210 12	1,610 89	120 64	33 10	117 65	5 61
Rainy River	1	1	1	24,444 42	8,908 07	199 98	284 90	1,171 04	14 98
Renfrew	....	....	....	22,785 84	12,240 87	627 19	483 68	1,179 57	25 89
Simcoe	1	....	....	66,424 22	19,926 45	4,041 64	1,542 45	2,249 26	462 20
Stormont, Dundas and Glengarry	1	....	1	57,927 00	8,476 87	1,092 96	679 55	907 99	87 54
Sudbury	1	....	....	25,328 95	34,596 55	1,645 91	761 07	3,038 12	106 63
Temiskaming	3	4	....	74,011 32	47,541 43	5,870 82	2,000 03	6,108 57	475 74
Thunder Bay	....	....	....	184,748 85	41,031 50	6,414 88	3,503 71	4,051 02	618 80
Victoria	....	....	....	212 00	2,161 97	467 42	50 00	347 25	11 50
Waterloo	....	....	....	94,654 59	20,128 83	761 86	1,442 09	1,874 56	37 07
Welland	....	....	....	45,405 51	72,130 76	3,454 23	1,872 47	1,839 01	.....
Wellington	....	....	....	15,320 10	7,987 66	1,422 37	877 06	772 77	53 41
Wentworth	....	....	....	88,584 17	37,641 89	4,894 43	2,255 90	4,371 58	430 03
York	....	....	....	246,546 31	35,695 51	3,801 27	3,741 65	3,054 76	200 36
Toronto	....	....	....	1,403,186 95	230,132 92	15,657 78	30,459 85	24,345 10	1,107 49
Totals	32	29	4	3,147,930 05	891,872 17	90,741 46	79,097 04	90,324 10	8,134 36

different Sheriffs for the year ending 31st December, 1916.—*Concluded.*

Amounts realized under writs of execution from sales of						Amount received for fines, penalties, etc.	Amount received (not fees) under Fi. Fas. without sale, goods and lands.		
Goods.			Lands.						
S.C.	C.C.	Div.C.	S.C.	C.C.	Div. C.		S.C.	C.C.	Div. C.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
2,305 00	806 75	.....	4,100 00	.....	.....	.....	612 35	848 67	.....
.....	.....	.....	.....	.....	.....	.....	.....	1,289 60	187 15
276 80	41 85	.....	.....	.....	150 00	.....	571 31	290 75	98 68
.....	110 80	.....	.....	20 00	.....	125 00	2,515 08	8,588 78	255 50
.....	.....	.....	.....	.....	.....	.....	.....	93 22	.....
.....	159 75	.....	.....	.....	.....	.....	235 90	2,304 66	329 90
140 00	.....	.....	.....	221 00	.....	.....	6,465 53	4,799 29	220 62
.....	.....	.....	.....	.....	.....	.....	.....	1,324 01	163 20
903 00	.....	.....	.....	.....	121 85	.....	.....	452 68	55 65
.....	1,630 46	139 05	423 49	.....	.....	82 79	.....	773 40	.....
.....	.....	.....	.....	.....	.....	.....	.....	2,144 74	133 30
.....	500 00	.....	.....	.....	65 00	.....	.....	2,639 95	218 82
609 00	1,585 46	.....	50 00	.....	.....	50 00	.....	3,568 93	128 00
.....	.....	.....	.....	.....	686 00	.....	147 59	172 99	.....
446 66	473 31	.....	.....	.....	.....	50 00	404 95	3,700 51	.....
1,492 50	127 01	.....	.....	.....	50 00	.....	543 23	893 40	108 57
.....	.....	.....	2,070 00	.....	.....	.....	.....	2,368 57	.....
8,220 79	450 75	.....	.....	.....	.....	.....	557 99	4,713 14	190 17
.....	194 45	.....	.....	.....	.....	.....	.....	.....	.....
.....	150 00	.....	.....	.....	.....	.....	380 00	1,908 96	83 85
.....	.....	.....	.....	.....	.....	.....	.....	1,176 64	.....
1,025 83	.....	.....	.....	.....	.....	120 00	.....	5,925 83	216 64
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	505 00	.....	.....	.....	.....	676 54	369 42	1,391 06	.....
.....	.....	.....	.....	.....	.....	.....	.....	541 94	.....
212 75	310 78	.....	105 00	.....	.....	.....	129 50	1,254 19	.....
.....	.....	.....	.....	.....	295 00	48 85	.....	688 80	.....
.....	.....	.....	.....	.....	.....	.....	236 89	2,111 23	1,227 55
.....	.....	.....	.....	.....	.....	117 00	999 36	3,269 46	.....
1,960 62	.....	.....	.....	.....	.....	.....	.....	660 52	.....
300 00	.....	.....	.....	.....	.....	37 00	1,289 38	3,308 81	444 42
.....	.....	.....	.....	101 00	.....	.....	.....	1,394 86	.....
.....	.....	.....	.....	.....	.....	.....	250 27	580 96	197 32
.....	170 00	.....	.....	.....	.....	.....	.....	133 76	.....
.....	347 50	.....	.....	.....	68 60	202 75	3,660 52	1,952 16	.....
.....	145 50	.....	.....	.....	.....	.....	.....	1,659 17	.....
.....	473 83	.....	.....	214 20	.....	.....	20 00	1,039 59	197 60
197 55	.....	.....	.....	.....	500 00	.....	.....	3,379 82	407 30
110 00	204 00	.....	.....	200 00	.....	.....	215 00	4,364 29	.....
1,289 30	2,766 75	.....	.....	105 60	1,448 13	670 00	.....	5,210 85	.....
1,740 00	1,606 10	.....	.....	192 60	.....	.....	1,333 28	7,825 12	385 99
.....	475 39	.....	.....	.....	.....	.....	125 00	578 81	.....
.....	115 00	.....	.....	910 00	.....	90 00	457 18	1,511 08	212 56
846 75	1,085 00	.....	.....	.....	.....	.....	300 00	3,161 82	161 50
110 00	.....	.....	.....	.....	.....	.....	.....	1,133 01	.....
8 90	62 30	.....	.....	.....	.....	.....	2,398 94	1,410 62	.....
.....	262 70	.....	284 10	.....	.....	500 00	5,757 29	1,982 96	.....
19,321 59	2,475 74	.....	7,500 00	102 50	.....	.....	11,144 20	10,613 23	1,059 96
41,517 04	17,236 18	139 05	14,532 59	2,066 90	3,384 58	2,769 93	41,120 16	14,136 84	6,684 25

APPENDIX B.—Being a return of business transacted by Local Masters through

County or District.	Number of Orders made for the following purposes:					
	For administration of estates.	For partition or sale of property.	Respecting Infants under R.S.O., Cap. 153, Sec. 5 (Examination only).	Under Winding-up Acts.	Other Orders made in chambers.	Examinations taken as special examiner or otherwise before trial.
Algoma						
Brant						
Bruce						
Carleton				2	178	70
Dufferin						1
Elgin						44
Essex		1		4		
Frontenac		1		5	3	2
Grey					7	1
Haldimand						
Halton						
Hastings		1			10	21
Huron						
Kenora					15	16
Kent						
Lambton		1			14	2
Lanark						
Leeds and Grenville		2			19	
Lennox and Addington						
Lincoln				14	7	1
Manitoulin					1	
Middlesex				7	28	3
Muskoka						
Nipissing						
Norfolk						
Northumberland and Durham	1				3	
Ontario						4
Oxford					2	
Parry Sound						
Peel	1				12	
Perth	1				4	
Peterborough		2		31	14	
Prescott and Russell						
Prince Edward					4	
Rainy River						
Renfrew						
Simcoe				1		10
Stormont, Dundas and Glengarry					13	2
Sudbury						
Temiskaming					12	
Thunder Bay						
Victoria						
Waterloo	1					
Welland				1		
Wellington				1	24	12
Wentworth		1		2	9	
Totals	4	9		68	379	189

out the Province of Ontario during the year ending 31st December, 1916.

Number of Judgments or Orders brought into the Master's Office for taking the following accounts, etc.

Administration of estates.	Executors', trustees' or committees' accounts and compensation.	Foreclosure of mortgage or bond.	Redemption of mortgage or bond.	Sale under mortgage or agreement.	Account on any charge or liens on lands other than mechanics' liens.	Accounts under Mechanic's Lien Act.	Specific performance.	Partnership accounts.	Alimony.	Partition or sale.	Damages for breach of contract or covenant.
.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
.....	.....	69	.....	8	.....	13	.....	.....	.....	1	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	2	.....	2	.....	1	.....	3	1	.....	1
.....	.....	4	.....	.....	.....	.....	.....	.....	.....	1	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	1	.....	.....	.....	1	.....	.....	.....	.....	.....
.....	2	1	.....	1	1	1	.....	.....	.....	1	.....
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	.....	.....	3	.....	.....	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	4	.....	.....	.....	5	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	2	.....	.....	.....	.....	.....	1	.....	3	.....
.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	2	18	.....	.....	.....	.....	.....	.....	.....	1	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	3	.....	.....	.....	11	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....
2	1	4	.....	1	.....	4	.....	1	.....	1	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	.....
.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	2	.....	1	.....	.....	.....	.....	.....	1	.....
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
.....	.....	7	.....	.....	1	2	.....	.....	.....	.....	.....
.....	.....	1	.....	2	.....	.....	.....	1	.....	.....	.....
1	.....	8	.....	1	.....	.....	.....	1	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	.....	1	.....	.....	.....	3	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	17	1	1	.....	1	.....	2	.....	.....	.....
23	10	168	1	21	2	47	.....	13	2	16	2

APPENDIX B.—Being a return of business transacted by Local Masters through

Number of Judgments or Orders.—*Con-*

County or District.	Work and labor done.	Money received, paid, advanced, or lent.	Goods sold and delivered.	Promissory notes and bills of exchange.	Bonds, life and fire insurance.	Infants' estates.	Quieting Title matters.
Algoma							
Brant							
Bruce							
Carleton							1
Dufferin							
Elgin							
Essex							1
Frontenac							
Grey							
Haldimand							
Halton							
Hastings							
Huron							
Kenora							
Kent							
Lambton							1
Lanark							
Leeds and Grenville							
Lennox and Addington							
Lincoln							
Manitoulin							
Middlesex							
Muskoka							
Nipissing							
Norfolk							
Northumberland and Durham							
Ontario							
Oxford							
Parry Sound							
Peel							
Perth							
Peterborough							
Prescott and Russell							
Prince Edward							
Rainy River			1				
Renfrew							
Simcoe							
Stormont, Dundas & Glengarry							
Sudbury							
Temiskaming		1					
Thunder Bay							
Victoria							
Waterloo							
Welland				2			
Wellington							
Wentworth							
Totals		1	1	2			3

out the Province of Ontario during the year ending 31st December, 1916.

tinued									
Lunacy.	Miscellaneous.	Number of advertisements of sale issued.	Number of reports issued.	Number of references pending at date of return.	Number of bills of cost taxed by Master.	Amount realized by sales held under direction of Master.	Amount of costs of reference, etc., taxed by Master or under his direction.	Amount of commission allowed in administration and partition matters.	Amount of fees earned by Local Masters during the year.
						$ c.	$ c	$ c.	$ c.
.....	3	.....	7	3	9	.....	.....	.....	164 20
.....	.....	.....	5	2	5	.....	274 92	.....	90 40
1	.....	1	4	2	2	310 00	200 83	.....	42 90
1	2	15	81	20	77	49,742 57	6,665 72	.....	2,290 94
.....	.....	1	3	.....	.....	6,662 00	668 48	.....	39 50
.....	1	1	3	2	6	3,500 00	88 50	.....	519 60
.....	.....	1	9	8	10	1,550 00	477 07	.....	248 53
2	1	2	6	3	3	.....	.....	.....	256 70
2	.....	.....	6	2	.....	.....	213 60	.....	130 20
.....	.....	.....	.....	1	.....	.....	.....	.....	5 00
1	.....	.....	2	1	1	.....	.....	.....	28 20
.....	2	1	1	.....	2	.....	417 90	.....	463 70
1	.....	1	1	2	.....	.....	.....	.....	22 50
.....	1	2	4	2	2	2,048 62	193 78	.....	237 00
.....	.....	.....	.....	.....	4	.....	197 50	.....	10 80
.....	.....	.....	3	3	.....	2,350 00	.....	125 00	240 72
.....	.....	.....	1	3	1	.....	72 66	.....	20 60
3	.....	3	17	4	7	24,028 84	888 54	344 50	238 50
.....	.....	.....	1	.....	1	.....	69 50	.....	18 44
1	.....	.....	.....	6	.....	.....	.....	.....	93 80
.....	.....	1	.....	1	.....	.....	.....	.....	16 00
5	5	.....	22	7	16	.....	1,218 57	.....	459 79
.....	.....	1	.....	1	.....	.....	.....	.....	19 00
.....	.....	.....	4	.....	.....	.....	.....	.....	22 80
1	.....	1	4	.....	1	.....	128 10	.....	98 80
.....	.....	1	.....	1	1	.....	1,340 00	.....	47 80
4	.....	.....	6	1	6	.....	.....	.....	157 50
2	1	.....	6	3	2	1,000 00	576 50	50 00	99 40
.....	.....	.....	.....	1	.....	.....	.....	.....	9 40
.....	.....	1	2	1	1	.....	13 80	.....	26 70
1	1	.....	5	2	2	.....	611 00	.....	101 40
1	.....	4	11	4	12	14,750 00	.....	.....	955 00
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	2	7	2	8	1,900 00	507 21	.....	118 60
.....	.....	.....	1	2	.....	.....	.....	.....	10 30
.....	1	.....	3	.....	2	.....	93 60	.....	47 10
.....	2	1	3	3	4	.....	212 99	.....	125 55
.....	.....	1	1	3	7	14,687 00	342 41	452 76	144 80
.....	.....	.....	6	.....	6	.....	217 23	.....	95 70
.....	.....	2	6	.....	5	10,500 00	338 45	.....	64 30
.....	.....	2	9	10	2	.....	116 35	.....	139 90
1	.....	1	2	.....	1	3,050 00	89 09	196 50	24 40
.....	.....	.....	5	4	6	.....	495 28	.....	167 10
.....	.....	2	2	3	.....	.....	.....	.....	87 30
.....	.....	.....	5	14	7	.....	833 24	.....	166 47
4	2	.....	.....	.....	.....	.....	.....	.....	399 60
32	22	48	264	127	219	136,079 03	17,562 82	1,168 76	8,766 94

APPENDIX C.—A return of all business transacted by Local Registrars, 31st Dec

County or District.	Writs of summons issued.	Orders for arrest issued.	Actions entered in Procedure Book.			*Precipe* orders issued.	Orders issued and signed by Local Judge.	Examination of parties returned.	Records passed.	Actions entered for Trial.		Actions tried.		Workmen's Compensation Actions tried.	
			Writs issued during year.	Writs issued during previous years.	Otherwise than by Writ.					With Jury.	Without Jury.	With Jury.	Without Jury.	With Jury.	Without Jury.
Algoma	72	....	48	5	....	3	49	18	12	3	9	2	2	....	....
Brant	68	....	49	3	4	....	30	25	17	3	16	2	12	....	....
Bruce	35	....	27	1	2	....	25	6	8	1	6	1	6	....	....
Carleton	422	....	308	23	77	21	31	30	42	9	47	8	32	....	....
Dufferin	6	....	6	2	2	....	6	1	2	2	....	....	....	....	....
Elgin	43	....	29	5	4	3	27	2	16	5	12	4	2	....	3
Essex	142	....	119	6	21	11	73	123	65	17	82	7	33	....	....
Frontenac	29	....	18	....	16	....	23	14	8	1	13	....	12	....	....
Grey	33	....	29	1	2	2	2	12	10	4	7	3	9	....	....
Haldimand	4	....	1	....	....	....	1	6	7	1	6	....	2	....	....
Halton	12	....	8	....	....	....	4	....	2	1	4	1	....	....	....
Hastings	48	....	39	3	1	5	7	28	12	10	10	9	7	....	....
Huron	32	....	28	....	1	2	10	7	17	5	13	2	8	....	....
Kenora	16	....	14	....	2	2	18	14	7	....	6	....	6	....	....
Kent	52	....	37	4	5	2	15	14	16	3	16	1	13	....	....
Lambton	32	....	30	....	19	2	12	10	9	2	8	1	7	....	....
Lanark	30	....	12	8	2	....	13	7	3	2	1	1	1	....	....
Leeds and Grenville	34	....	25	2	7	2	23	6	9	....	9	....	7	....	....
Lennox and Addington	17	....	16	....	....	2	9	4	2	1	1	....	1	....	....
Lincoln	47	....	45	3	5	4	22	42	20	4	24	2	15	....	....
Manitoulin	2	....	2	....	....	....	1	....	....	....	....	....	....	....	....
Middlesex	160	....	72	2	41	36	64	54	24	5	27	2	15	....	....
Muskoka	5	....	3	....	2	....	8	....	1	1	3	1	3	....	....
Nipissing	36	....	28	4	3	1	26	10	12	1	11	1	8	....	....
Norfolk	16	....	15	3	....	8	4	1	4	....	....	6	....	3	....
Northumberland and Durham	26	....	9	2	....	....	14	8	7	3	8	1	4	....	....
Ontario	20	....	12	1	4	....	1	2	1	....	1	....	2	....	....
Oxford	20	....	17	4	4	3	11	14	6	1	5	....	5	....	....
Parry Sound	14	....	14	....	9	....	5	5	3	1	2	....	2	....	....
Peel	11	....	8	2	1	....	6	1	....	....	....	....	....	....	....
Perth	38	....	30	1	8	1	14	20	14	2	14	2	14	....	....
Peterborough	50	....	40	1	11	1	5	23	9	2	7	....	6	....	....
Prescott and Russell	11	....	6	....	....	....	4	5	3	1	2	1	1	....	....
Prince Edward	7	....	3	2	....	....	1	3	....	....	....	....	....	....	....
Rainy River	45	....	41	1	6	12	32	....	16	9	14	2	9	....	....
Renfrew	24	....	8	1	1	4	6	3	3	2	2	2	1	....	....
Simcoe	52	....	23	3	3	2	7	6	18	3	15	....	5	....	....
Stormont, Dundas and Glengarry	47	....	35	8	7	1	7	....	9	....	11	....	9	....	....
Sudbury	61	....	38	60	4	3	19	....	19	7	12	1	5	....	....
Temiskaming	62	....	46	4	26	1	36	44	14	4	12	3	5	....	....
Thunder Bay	128	....	106	6	5	80	62	35	17	15	11	4	4	....	....
Victoria	15	....	13	....	1	....	7	1	1	....	....	1	....	....	....
Waterloo	53	5	39	3	14	4	43	26	16	2	17	1	9	....	....
Welland	30	....	22	2	19	2	21	11	22	6	7	3	7	....	....
Wellington	41	....	41	....	3	....	28	8	10	4	7	2	4	....	....
Wentworth	201	....	169	8	20	3	90	57	55	22	49	10	33	....	....
Totals	2349	5	1728	184	362	223	922	706	568	165	527	87	326	3	3

Deputy Registrars and Deputy Clerks of the Crown for the year ending ember, 1916.

Remanets. standing for trial.		Judgments entered without trial.	Amount of such Judgments, without costs.	Amount of costs taxed thereunder (exclusive of Disbursements).	Amount of disbursements allowed.	Judgments entered after trial.	Amount of such Judgments, without costs.	Amount of costs taxed thereunder (exclusive of Disbursements).	Amount of disbursements allowed.	Number of Judgments for over $10,000.	Number of Judgments for $10,000 and above $5,000.
With Jury.	Without Jury.		$ c.	$ c.	$ c.		$ c.	$ c.	$ c.		
....	2	28	133,316 36	613 35	336 25	10	3,815 01	573 70	110 52	4	1
....	1	19	75,122 91	615 00	153 83	11	3,389 08	973 40	259 70	2	1
....	....	7	4,833 74	106 58	29 43	8	3,075 00	393 20	242 70	....	....
1	6	190	281,373 84	3,756 48	1,606 71	31	67,368 40	2,449 86	235 08	3	11
....	....	1	.....	62 60	27 35	....	.....	.....	.....	....	....
....	1	10	20,258 37	225 00	65 70	9	5,502 66	612 00	32 10	....	1
1	19	20	74,312 72	769 83	124 03	31	26,308 69	4,153 91	1,308 03	1	1
....	1	4	8,555 08	101 00	74 99	5	24,705 37	1,475 50	222 18	1	....
....	....	8	41,020 42	212 00	60 73	6	3,501 00	399 48	644 47	1	....
....	....	3	3,564 40	111 00	31 35	....	.....	.....	.....	....	....
....	....	2	8,648 73	219 46	9 55	....	.....	.....	.....	....	....
1	3	13	12,727 93	1,384 31	89 21	11	7,941 89	662 27	36 13	....	....
....	8	8	27,030 60	220 80	74 71	7	143,686 10	1,249 10	430 68	3	1
....	....	3	7,548 06	124 10	15 70	7	2,774 05	1,084 43	1,382 38	....	1
....	....	5	14,476 64	121 00	63 70	3	2,350 00	224 20	573 00	....	1
1	....	6	6,543 88	241 00	611 18	9	7,318 69	1,793 99	516 39	....	....
....	....	16	24,269 39	475 31	171 97	1	1,000 00	140 00	21 60	....	....
....	....	21	49,179 13	605 30	164 25	6	1,843 99	300 00	150 30	1	2
....	....	3	2,831 88	82 75	30 40	1	.....	.....	.....	....	....
....	1	11	13,652 86	306 60	51 15	13	24,714 67	1,973 55	783 00	....	2
1	1	....	.....	.....	.....	....	.....	.....	.....	....	....
1	5	48	43,652 71	517 50	113 60	23	12,974 58	1,074 45	113 10	....	2
....	....	....	.....	.....	.....	1	.....	.....	.....	....	....
....	....	19	38,414 37	453 50	128 10	7	10,875 51	470 70	49 10	1	1
....	....	7	7,510 35	140 40	30 00	1	.....	.....	84 22	....	....
....	1	4	4,223 23	58 00	26 58	3	3,007 20	257 00	32 65	....	....
....	....	8	6,232 02	58 00	12 50	2	10,020 00	169 50	24 24	....	1
1	....	6	30,263 49	205 50	47 60	4	2,266 49	650 00	6 00	1	....
....	2	5	6,175 58	125 00	53 44	2	450 00	.....	.....	....	....
....	....	5	14,883 97	254 75	55 95	....	.....	.....	.....	....	....
....	1	11	10,675 10	354 00	73 90	6	4,488 61	480 45	38 95	....	....
....	....	13	22,529 77	300 00	117 01	6	4,239 56	272 40	28 38	....	....
....	1	1	832 01	27 00	7 55	1	1,400 00	.....	.....	....	....
....	....	4	13,198 52	145 80	58 58	....	.....	.....	.....	....	....
7	5	9	14,711 66	295 90	55 40	3	12,600 65	82 00	15 15	1	1
....	....	2	16,951 78	152 00	14 20	3	1,150 00	.....	.....	....	....
....	....	7	8,172 56	266 75	55 45	9	6,063 30	441 66	168 30	....	....
....	....	18	73,714 87	649 82	113 10	6	54,172 38	199 00	130 70	2	1
....	....	13	14,605 16	558 94	43 20	6	1,424 28	286 90	16 80	....	1
....	....	12	14,249 60	1,751 00	170 37	8	4,639 47	1,254 73	182 15	....	....
....	....	44	244,818 38	1,645 70	429 61	22	146,582 00	1,245 90	197 80	8	5
....	....	3	5,861 56	196 50	92 59	1	5,415 06	95 90	27 00	....	....
....	....	16	68,673 33	540 50	137 94	8	10,005 17	318 90	89 40	1	3
1	2	10	2,423 50	160 00	37 85	12	4,838 21	1,202 38	227 35	....	....
....	....	3	5,121 58	128 10	.....	4	4,350 00	238 50	.....	....	....
4	7	63	240,637 74	1,777 59	475 48	25	25,099 80	3,418 49	341 02	6	5
19	67	709	1,717,799 78	21,115 72	6,142 19	332	655,356 87	30,617 45	8,720 57	36	42

APPENDIX C.—A return of all business transacted by Local Registrars, 31st Dec

County or District.	Number of Judgments for $5,000 and above $2,000.	Number of Judgments for $2,000 and above $1,000.	Number of Judgments for $1,000 and above $400.	Number of Judgments for $400 and under.	Number of Judgments dismissing actions.	Number of Judgments in default of appearance or pleading.	Number of Judgments under Con. Rule 57.	Number of Judgments for reference to Master.	Number of Writs of Execution issued.	Number of Writs of Execution renewed.	No. of Writs of *Ca. Sa.* issued.	Number of Certificates issued under Creditors' Relief Act.	Amount for which issued, without costs.
													$ c.
Algoma	7	6	13	2	1	26	....	1	17	....	....	....	.....
Brant	3	6	8	5	4	18	1	8	5	2	....	....	.....
Bruce	1	2	4	8	2	5	....	....	4	1	....	....	.....
Carleton	44	48	23	1	6	23	14	73	....	....	....	....	.....
Dufferin	....	....	....	1	....	1	1	....	1	1	....	....	.....
Elgin	3	5	1	9	2	10	....	3	8	4	....	....	.....
Essex	6	11	7	4	4	11	3	7	19	4	....	....	.....
Frontenac	3	1	2	....	2	4	....	....	3	2	....	....	.....
Grey	3	....	4	1	3	8	1	4	10	....	....	....	.....
Haldimand	....	2	....	....	....	2	....	1	....	....	....	....	.....
Halton	2	....	....	....	....	1	....	....	2	1	....	....	.....
Hastings	4	2	4	3	6	6	....	7	7	5	....	....	.....
Huron	3	4	2	2	....	10	1	6	7	4	....	....	.....
Kenora	....	1	3	....	2	3	....	....	2	1	....	....	.....
Kent	5	5	....	1	1	4	1	....	6	1	....	....	.....
Lambton	1	4	5	3	2	6	1	2	7	....	....	....	.....
Lanark	5	9	1	2	....	2	....	3	6	1	....	....	.....
Leeds and Grenville	2	5	8	....	2	18	....	3	10	....	....	....	.....
Lennox and Addington	1	....	....	....	....	....	....	1	3	2	....	....	.....
Lincoln	4	5	5	....	1	4	1	3	13	2	....	....	.....
Manitoulin	....	....	....	....	....	....	....	....	....	....	....	....	.....
Middlesex	10	7	6	5	6	44	....	21	13	2	....	....	.....
Muskoka	....	....	....	....	....	....	....	....	1	....	....	....	.....
Nipissing	4	10	2	2	2	14	2	1	14	1	....	....	.....
Norfolk	2	1	1	3	....	7	....	2	5	....	....	....	.....
Northumberland and Durham	2	1	....	....	1	2	....	2	1	2	....	....	.....
Ontario	2	2	1	....	2	8	....	2	....	2	....	....	.....
Oxford	2	2	....	....	1	4	....	....	7	....	....	....	.....
Parry Sound	1	1	3	....	1	5	....	....	3	....	....	....	.....
Peel	....	....	....	....	....	....	....	....	3	1	....	....	.....
Perth	2	2	5	8	1	11	....	1	6	2	....	....	.....
Peterborough	4	6	3	5	1	12	....	5	13	....	....	....	.....
Prescott and Russell	....	1	1	....	....	1	....	....	1	1	....	....	.....
Prince Edward	3	2	....	....	....	5	....	3	....	....	....	....	.....
Rainy River	1	2	6	....	....	6	....	1	13	1	....	6	408 26
Renfrew	....	....	....	....	....	2	....	....	4	3	....	....	.....
Simcoe	....	4	5	1	1	7	....	1	4	4	....	....	.....
Stormont, Dundas and Glengarry	7	5	7	2	2	18	....	....	13	....	....	....	.....
Sudbury	....	3	4	1	4	....	....	....	7	....	....	....	.....
Temiskaming	3	5	7	2	3	7	4	2	13	....	....	....	.....
Thunder Bay	18	17	10	8	....	64	....	8	54	10	....	....	.....
Victoria	3	1	....	....	....	3	....	1	....	....	....	....	.....
Waterloo	7	1	2	2	2	16	1	3	13	....	....	....	.....
Welland	2	2	2	2	5	7	....	2	8	....	....	....	.....
Wellington	3	....	3	....	....	3	....	1	4	1	....	....	.....
Wentworth	10	18	15	34	10	51	11	12	50	9	....	....	.....
Totals	183	209	173	117	80	459	42	190	380	70	....	6	408 26

Deputy Registrars and Deputy Clerks of the Crown for the year ending ember, 1916.—*Concluded.*

Amount of Costs allowed thereunder (including Disbursements).	Number of days of sitting of Judge with Jury.	Number of days of sitting of Judge without Jury.	Number of Estreats ordered to be issued.	Number of Estreats issued.	Amount of Jury fees paid County or Provincial Treasurer.	Amount of money paid into Court with defence.	Amount of money paid out of Court.	Fees collected in law stamps by Deputy Clerks and Local Registrars.
$ c.					$ c.	$ c.	$ c.	$ c.
.....	4	3	.....	.....	9 00	361 80	.....	486 10
.....	2	8	.....	.....	9 00	.....	.....	455 60
.....	4	5	.....	.....	3 00	.....	.....	251 90
.....	10	11	.....	.....	27 00	4,593 60	.....	711 20
.....	4	1	.....	.....	6 00	.....	.....	50 60
.....	5	3	.....	.....	15 00	1,374 20	.....	315 80
.....	11	18	.....	.....	39 00	.....	.....	1,195 10
.....	.....	12	.....	.....	3 00	.....	.....	178 60
.....	7	3	.....	.....	12 00	.....	.....	248 60
.....	3	.....	.....	.....	3 00	.....	.....	154 90
.....	1	1	.....	.....	3 00	.....	.....	62 90
.....	5	4	.....	.....	27 00	1,877 54	.....	355 50
.....	6	6	.....	.....	12 00	200 00	.....	205 10
.....	7	6	.....	.....	3 00	.....	.....	172 00
.....	4	4	.....	.....	9 00	.....	.....	399 60
.....	2	3	.....	.....	6 00	.....	.....	275 80
.....	1	4	.....	.....	6 00	.....	.....	172 90
.....	.....	4	.....	.....	.....	.....	.....	340 05
.....	.....	4	.....	.....	3 00	.....	.....	117 30
.....	4	4	.....	.....	12 00	6,244 37	.....	461 90
.....	.....	.....	.....	.....	.....	.....	.....	5 10
.....	2	20	.....	.....	15 00	247 25	.....	172 60
.....	4	4	.....	.....	3 00	.....	.....	58 60
.....	1	6	.....	.....	3 00	1,630 47	.....	304 20
.....	5	.....	.....	.....	.....	.....	.....	91 70
.....	5	8	.....	.....	9 00	.....	.....	189 70
.....	.....	2	.....	.....	.....	.....	.....	112 60
.....	.....	5	.....	.....	3 00	.....	.....	132 90
.....	.....	4	.....	.....	3 00	.....	.....	106 10
.....	.....	2	.....	.....	.....	.....	.....	91 00
.....	1	7	.....	.....	3 00	.....	.....	278 30
.....	4	6	.....	.....	3 00	.....	.....	352 20
.....	2	3	.....	.....	3 00	.....	.....	72 70
.....	.....	.....	.....	.....	.....	.....	.....	37 50
35 33	3	3	.....	.....	18 00	3,739 20	.....	389 30
.....	2	4	.....	.....	6 00	.....	.....	108 60
.....	3	5	.....	.....	9 00	666 44	.....	303 00
.....	7	4	.....	.....	.....	.....	.....	453 20
.....	9	10	.....	.....	21 00	.....	.....	57 00
.....	6	4	.....	.....	12 00	.....	.....	472 85
.....	13	3	.....	.....	24 00	9,024 71	.....	1,028 65
.....	1	2	.....	.....	.....	3,050 00	.....	74 00
.....	1	7	.....	.....	6 00	.....	.....	437 70
.....	6	2	.....	.....	18 00	1,329 16	.....	265 70
.....	4	4	.....	.....	12 00	135 00	.....	248 80
.....	9	24	.....	.....	66 00	10 00	.....	1,450 25
35 33	167	243	.....	.....	444 00	34,483 74	.....	13,905 70

APPENDIX D.—Being a return of business transacted by County and District

County or District.	Writs of summons issued.	Orders for arrest issued.	Actions entered in Procedure Book.			Præcipe orders issued.	Orders issued and signed by Local Judge.	Examination of Parties returned.	Records passed.	Actions entered for Trial with Jury.	Actions entered for Trial without Jury.	Number of actions tried with Jury.	Number of actions tried without Jury.	Workmen's Compensation Actions for Trial.	
			Writs issued during the year.	Do. previous years.	Otherwise than by Writ.									With Jury	Without Jury
Algoma	73	..	46	8	4	....	37	11	6	2	7	1	5	..	..
Brant	111	..	80	3	14	2	29	33	27	9	26	3	21	..	..
Bruce	60	..	49	3	5	....	33	8	10	1	9	1	5	..	..
Carleton	424	..	312	24	23	7	51	74	64	10	54	5	25	..	..
Dufferin	5	..	5	....	....	....	2	4	2	1	1	1	1	..	..
Elgin	63	..	46	3	3	3	15	....	9	3	6	1	3	..	..
Essex	108	..	88	8	36	2	44	32	30	4	30	1	29	..	..
Frontenac	67	..	35	1	21	....	11	31	12	1	9	1	7	..	..
Grey	61	..	44	....	7	....	2	15	5	....	5	1	5	..	..
Haldimand	28	..	19	3	....	....	3	....	3	....	3	...	2	..	..
Halton	31	..	22	8	....	....	6	....	8	1	7	...	6	..	..
Hastings	76	..	53	4	3	2	50	15	16	10	10	6	6	..	..
Huron	58	..	39	1	3	3	5	11	16	9	7	3	5	..	..
Kenora	26	..	21	1	2	....	15	....	4	....	4	...	4	..	..
Kent	86	..	28	5	....	....	17	22	21	11	10	10	8	..	..
Lambton	66	..	52	2	18	1	13	12	14	3	11	2	9	..	..
Lanark	41	..	27	2	....	2	6	8	3	....	3	...	....	..	..
Leeds & Grenville	81	..	53	10	5	1	12	9	10	3	7	...	10	..	..
Lennox & Addington	35	..	32	....	1	1	7	14	12	3	9	2	10	..	..
Lincoln	65	..	50	....	2	....	12	11	18	2	20	...	16	..	..
Manitoulin	3	..	1	....	1	....	1	....	....	....	....	....	....	..	..
Middlesex	235	..	159	8	40	3	45	44	26	8	18	6	17	..	..
Muskoka	14	..	10	....	....	....	1	3	4	....	4	...	3	..	..
Nipissing	87	..	56	7	4	....	27	10	12	1	18	...	9	..	..
Norfolk	44	..	22	2	....	13	4	7	7	3	4	3	1	..	..
Northumb'rl'd&Durham	42	..	19	1	....	....	18	8	8	5	5	1	4	..	..
Ontario	31	..	26	1	9	1	6	2	3	2	3	4	2	..	..
Oxford	53	..	35	3	2	....	15	7	6	....	6	...	6	..	..
Parry Sound	15	..	15	....	11	....	6	11	3	1	2	1	2	..	..
Peel	16	..	12	....	....	2	4	4	3	1	2	1	2	..	..
Perth	74	..	48	2	9	3	11	27	18	4	14	4	21	..	..
Peterborough	92	..	80	2	11	....	.....	28	20	6	15	5	12	..	..
Prescott and Russell	26	..	11	2	1	1	5	2	3	....	3	...	3	..	..
Prince Edward	20	..	17	2	1	9	3	9	7	....	7	...	8	..	..
Rainy River	48	..	44	5	4	4	24	....	12	4	11	4	11	..	..
Renfrew	46	..	28	9	....	14	5	3	3	1	3	1	3	..	..
Simcoe	100	..	68	3	....	4	11	10	12	4	8	1	5	..	..
Stormont, Dundas and Glengarry	66	..	43	4	2	2	4	....	12	3	11	3	6	..	..
Sudbury	188	..	145	137	....	4	55	....	33	....	33	...	18	..	..
Temiskaming	160	..	119	7	....	4	81	31	30	6	42	4	25	..	..
Thunder Bay	163	..	121	13	....	143	18	14	18	....	10	...	10	..	..
Victoria	32	..	27	....	1	....	6	12	11	4	7	3	3	..	..
Waterloo	94	..	62	5	....	2	36	23	14	5	9	3	7	..	..
Welland	74	..	62	7	13	....	19	3	13	2	11	1	5	..	..
Wellington	52	..	56	5	6	....	24	....	9	3	6	1	3	..	..
Wentworth	361	..	261	7	11	5	65	87	80	30	50	15	30	..	..
York	2,119	3	1,342	437	6	124	354	857	296	82	214	56	213	..	..
Totals	5,820	3	3,990	753	279	362	1,218	1512	953	248	754	155	506	..	..

Court Clerks throughout the Province of Ontario for the year ending 31st December, 1916.

Number of Remanets standing for Trial.		Number of Judgments entered without Trial.	Total amount of such Judgments without costs.	Total amount of Costs taxed thereunder (exclusive of Disbursements).	Total amount of Disbursements allowed.	Number of Judgments entered after Trial.	Total amount of such Judgments without costs.	Total amount of Costs taxed thereunder (exclusive of Disbursements).	Total amount of Disbursements allowed.	Number of Judgments $400 and under.	Number of Judgments dismissing actions.	Number of Judgments in default of appearance or pleading.	Number of Judgments under Con. Rule 57.
With Jury	Without Jury												
			$ c.	$ c.	$ c.		$ c.	$ c.	$ c.				
1	2	27	7,662 73	383 00	238 01	10	2,113 85	499 00	218 14	27	1	27	2
..	4	35	10,412 35	561 00	319 57	15	3,443 64	1,527 75	410 05	40	2	....	....
..	12	19	7,032 44	268 55	161 06	5	866 72	306 64	573 31	24	....	19	....
..	7	206	49,149 50	3,120 58	1,504 80	37	8,573 33	2,416 35	474 16	226	14	184	14
..	...	2	729 75	44 00	21 75	4	850 00	314 00	151 40	5	....	2	....
..	...	25	7,715 27	386 55	226 19	6	1,578 81	544 20	228 63	31	....	26	....
..	3	39	12,355 10	940 24	286 24	28	4,576 88	3,096 87	1,472 52	56	9	38	....
..	1	33	11,896 44	727 55	287 15	5	1,611 89	400 00	157 50	33	5	33	....
..	...	21	7,003 71	298 00	144 32	3	284 00	108 00	135 60	22	1	20	2
..	...	15	4,490 84	189 50	110 96	3	505 00	.....	.....	14	1	13	....
..	...	15	4,626 33	266 25	139 23	2	.....	.....	.....	....	2	....	....
1	3	19	5,691 07	421 12	105 64	9	1,211 51	793 40	161 05	24	4	16	....
3	5	13	4,875 46	284 84	119 92	5	175 00	471 15	218 25	18	1	13	....
..	...	12	3,597 84	230 00	100 50	3	512 50	184 60	108 10	12	....	12	....
..	2	44	15,004 91	701 00	425 32	17	3,188 32	552 00	438 42	48	2	43	1
..	...	21	6,018 20	383 00	131 66	6	1,511 77	623 00	334 34	27	....	21	1
..	...	14	4,847 79	246 50	103 08	1	540 50	186 90	33 40	15	....	13	....
..	2	38	10,794 32	713 16	349 60	5	639 00	376 00	187 48	41	2	58	....
..	...	19	5,342 97	331 10	168 80	9	1,674 82	764 65	474 56	28	2	19	....
..	...	22	6,106 46	475 10	165 60	5	732 22	624 22	155 92	26	....	....	....
..	....	....	619 58	23 00	10 00	....	.....	.....	.....	1	....	1	....
..	2	74	21,662 75	1,103 61	530 90	16	3,960 33	1,018 45	430 47	87	2	73	1
..	...	4	35 00	52 00	24 00	2	217 08	20 20	50 15	4	....	4	....
1	2	13	12,990 28	576 20	290 52	8	2,686 36	355 60	201 60	49	1	40	1
..	...	15	6,315 56	266 40	225 15	5	1,050 00	201 95	40 50	19	5	18	....
1	1	12	3,991 66	283 50	111 70	2	304 91	121 00	36 35	14	....	12	....
..	...	15	5,211 64	257 50	137 28	4	2,679 13	244 00	69 05	17	....	15	....
..	2	22	6,926 45	389 80	85 30	5	2,104 42	610 58	797 43	22	1	20	....
..	1	13	2,110 42	120 45	77 73	2	105 81	15 00	.....	2	7	....	....
..	...	8	110 00	322 35	133 85	2	10 00	321 85	133 80	2	1	....	....
1	3	22	6,267 15	324 00	167 57	9	3,927 99	832 35	258 19	31	1	21	....
..	2	40	12,676 14	582 70	359 28	10	3,558 05	356 55	63 40	49	1	37	....
..	...	5	1,725 66	86 00	50 91	....	.....	.....	.....	5	....	5	....
..	...	11	3,536 16	185 00	93 70	3	433 15	174 00	93 71	11	3	11	....
..	...	28	6,354 97	424 76	202 35	9	2,315 42	361 00	182 00	33	4	23	....
..	...	....	.....	.....	.....	....	.....	.....	.....	....	....	23	....
..	...	32	12,337 04	758 50	445 83	6	1,447 70	359 38	80 95	31	1	32	....
..	3	25	7,306 68	465 00	248 75	....	.....	.....	.....	25	....	20	....
..	...	96	35,879 20	1,435 43	857 04	13	2,802 00	1,089 40	314 42	106	3	....	....
..	4	82	24,587 00	1,303 45	679 99	40	10,324 86	3,807 69	1,322 96	115	7	76	8
..	...	96	34,687 10	1,628 50	707 15	17	6,517 31	960 40	228 32	97	1	96	....
..	1	13	2,750 69	244 18	206 00	8	456 62	220 00	160 50	12	3	8	....
..	3	49	16,210 29	881 20	312 10	9	1,608 60	928 00	356 08	50	5	42	3
1	6	36	10,541 77	528 05	250 67	9	3,095 99	693 82	381 63	42	3	33	....
..	...	15	4,422 30	266 85	102 85	3	736 32	145 00	57 20	18	....	13	....
7	12	135	50,781 37	3,007 88	1,057 53	28	5,350 32	2,792 39	479 30	163	7	120	15
5	22	767	280,003 15	18,904 09	7,349 50	224	71,389 95	16,151 90	3,645 26	1179	59	820	32
21	95	2267	755,393 49	45,391 44	19,827 05	612	161,672 08	45,569 24	15,316 10	2901	161	2120	80

APPENDIX D.—Being a return of business transacted by County and District

County or District.	Number of Judgments for reference to Master.	Writs of Execution issued.	Number of Writs of Execution renewed.	Number of Writs of *Ca. Sa.* issued.	Number of Certificates issued under Creditors' Relief Act.	Amount for which issued, without Costs.	Amount of Costs allowed thereunder (including Disbursements).	Number of days of sittings of County Court.	Amount of Jury Fees paid County or Provincial Treasurers.	Amount of money paid into Court with defence.
						$ c.	$ c.		$ c.	$ c.
Algoma	1	22	10	....	....	.....	.....	1 6	3 00	1,273 12
Brant	....	37	1	....	....	.....	.....	4 22	12 00	138 00
Bruce	....	20	1	....	....	.....	.....	4 9	1 50	129 51
Carleton	2	212	27	....	....	.....	.....	6 30	15 00	1,207 54
Dufferin	....	7	2	....	....	.....	.....	2 3	1 50	.....
Elgin	....	27	1	....	....	.....	.....	3 5	4 50	.....
Essex	1	55	6	....	....	.....	.....	1 25	6 00	272 97
Frontenac	1	21	3	....	....	.....	.....	1 16	1 50	3 25
Grey	....	21	4	....	15	2,241 16	60 85	3 7	.....	.....
Haldimand	....	11	....	....	1	1,435 44	14 00	3 5	.....	.....
Halton	....	9	1	....	....	.....	.....	... 10	1 50	74 54
Hastings	....	15	7	....	....	.....	.....	11 2	13 50	605 22
Huron	....	18	4	....	....	.....	.....	7 6	13 50	.....
Kenora	....	3	1	....	....	.....	.....	... 4	.....	663 10
Kent	....	42	....	....	2	1,588 83	15 68	4 6	16 50	129 85
Lambton	....	26	2	....	....	.....	.....	4 6	4 50	.....
Lanark	....	10	1	....	....	.....	.....	... 4	.....	.....
Leeds and Grenville	....	26	....	....	....	.....	.....	... 6	1 50	134 00
Lennox and Addington	....	13	5	....	....	.....	.....	3 10	4 50	.....
Lincoln	1	23	....	....	....	.....	.....	9 12	3 00	1,854 69
Manitoulin	....	1	....	....	....	.....	.....	... ...	.....	.....
Middlesex	....	79	2	....	....	.....	.....	3 19	12 00	8,641 92
Muskoka	....	7	....	....	....	.....	.....	3 3	1 50	.....
Nipissing	1	34	2	....	....	.....	.....	... 9	1 50	125 00
Norfolk	....	17	....	....	....	.....	.....	5 4	7 50	7,525 00
Northumberland and Durham	....	10	3	....	....	.....	.....	4 7	4 50	1,697 20
Ontario	....	14	1	....	....	.....	.....	6 4	6 00	.....
Oxford	....	23	1	....	1	128 00	6 35	... 12	.....	.....
Parry Sound	....	11	1	....	....	.....	.....	2 2	1 50	105 81
Peel	....	2	1	....	4	3,013 00	51 30	1 7	1 50	.....
Perth	....	21	....	....	8	601 81	30 60	3 17	6 00	498 77
Peterborough	....	47	1	....	....	.....	.....	12 28	7 50	.....
Prescott and Russell	....	7	....	....	....	.....	.....	... 4	.....	100 00
Prince Edward	....	4	....	....	....	.....	.....	... 9	.....	106 43
Rainy River	....	28	....	....	....	.....	.....	2 17	3 00	402 00
Renfrew	....	19	2	....	....	.....	.....	4 5	1 50	.....
Simcoe	....	35	3	....	....	.....	.....	1 6	6 00	593 88
Stormont, Dundas and Glengarry	....	23	4	....	4	448 88	23 80	5 3	3 00	1,152 90
Sudbury	....	90	1	....	....	.....	.....	... 23	.....	2,637 65
Temiskaming	2	88	2	....	15	2,943 90	119 86	6 19	9 00	671 00
Thunder Bay	....	109	30	....	....	.....	.....	... 10	.....	105 31
Victoria	....	7	....	....	....	.....	.....	3 11	6 00	96 67
Waterloo	1	68	2	....	....	.....	.....	3 9	7 50	153 00
Welland	....	32	....	....	....	.....	.....	2 11	3 00	.....
Wellington	....	12	2	....	....	.....	.....	2 6	4 50	266 35
Wentworth	....	128	10	....	....	.....	.....	11 14	45 00	.....
York	4	583	35	....	17	8,312 70	176 82	65 150	123 00	8,342 97
Totals	14	2117	179	....	67	20,713 72	499 26	209 603	364 50	39,707 65

Court Clerks in the Province of Ontario for the year ending 31st December, 1916.—*Concluded.*

Amount of money paid out of Court.	Number of Partition Matters.	Amount of money paid thereunder.	Amounts paid out.	Amount of moneys in Court in County Court matters, including interest (under Con. Rule 769).	Number of Chattel Mortgages and Bills of Sale filed.	Total amount secured by such mortgages.	Number of mortgages renewed.	Number of discharges filed.	Number of assignments for benefit of creditors.	Number of Hire Receipts, etc., filed under R.S.O. Cap. 136.	Total amount secured by such Receipts, etc.	Amount of fees collected in law stamps under Section 42 of the Creditors' Relief Act.
$ c.			$ c.	$ c.		$ c.					$ c.	$ c.
2,026 26	..	..	.....	350 87	241	9,112,755 80	93	17	5	194	53,800 26	.....
15,594 52	..	..	.....	893 39	103	425,221 09	72	13	9	354	143,092 44	.....
131 03	..	..	.....	95 35	159	63,519 00	130	5	4	107	27,419 73	.....
596 19	..	..	.....	1,044 63	292	208,911 94	117	20	73	643	91,357 78	.....
.....	..	..	.....	.....	37	56,199 08	34	1	....	73	11,296 15	.....
310 88	..	..	.....	486 04	322	257,137 20	128	6	19	202	57,262 60	.....
225 53	..	..	.....	597 09	245	95,639 05	111	10	11	865	128,502 45	.....
3 25	..	..	.....	.....	251	160,351 72	96	11	2	215	47,778 61	.....
65 00	..	..	.....	.....	409	219,460 06	251	3	5	234	41,093 37	4 60
.....	..	..	.....	.....	60	56,961 32	32	2	1	48	30,792 59	3 00
74 54	..	..	.....	.....	68	312,070 29	19	4	1	49	31,868 15	.....
372 97	..	..	.....	1,904 13	447	159,248 74	235	11	8	274	88,151 40	.....
.....	..	..	.....	205 69	91	68,841 64	81	7	10	98	44,171 93	.....
663 10	..	..	.....	94 98	56	186,447 70	17	3	2	54	8,899 40	.....
680 37	..	..	.....	26 97	269	729,963 79	186	13	6	627	87,728 50	4 60
100 00	..	..	.....	160 92	176	66,929 45	154	4	9	104	47,887 65	.....
108 70	..	..	.....	404 20	55	68,783 37	68	4	3	45	13,179 42	.....
296 50	..	..	.....	566 23	166	87,255 11	130	12	3	223	31,834 10	.....
.....	..	..	.....	.....	160	44,070 09	90	8	5	148	17,946 25	.....
438 95	..	..	.....	1,415 14	126	108,637 14	501	7	6	286	123,676 77	.....
.....	..	..	.....	.....	80	24,686 99	42	3	1	7	2,267 00	.....
8,387 56	..	..	.....	673 94	160	233,453 63	98	1	17	961	141,261 08	.....
.....	..	..	.....	.....	165	92,301 39	87	5	7	28	6,686 50	.....
125 07	..	..	.....	124 61	176	136,391 19	77	4	8	31	8,086 32	.....
150 00	..	..	.....	398 00	101	43,849 36	97	4	6	86	30,497 36	1 80
5,309 25	..	..	.....	9,175 56	162	108,138 36	181	17	8	120	46,487 74	.....
682 85	..	..	.....	12,654 75	115	170,712 14	90	8	11	123	26,606 62	.....
355 12	..	..	.....	1,990 47	113	85,978 80	108	12	6	118	46,162 90	80
105 81	..	..	.....	.....	193	289,205 39	64	5	1	35	10,201 31	.....
.....	..	..	.....	27 84	59	26,576 08	19	2	2	35	19,976 73	11 30
405 29	..	..	.....	256 54	128	139,077 65	46	5	5	86	51,110 15	.....
746 34	..	..	.....	.....	114	43,171 48	65	3	8	56	67,974 53	.....
.....	..	..	.....	.....	192	184,622 42	60	7	7	33	28,691 04	.....
106 43	..	..	.....	100 00	46	28,353 84	55	2	2	32	8,551 35	.....
.....	..	..	.....	1,201 13	110	42,759 04	33	9	1	151	19,996 41	.....
.....	..	..	.....	4,017 55	127	164,445 91	161	8	2	91	63,376 14	.....
491 44	..	..	.....	.....	188	316,920 77	198	8	9	238	439,892 64	.....
52 90	..	..	.....	424 22	275	190,891 27	107	10	13	465	27,939 70	.....
1,877 77	..	..	.....	8,261 03	324	6,205,137 32	81	21	3	230	89,365 33	.....
1,055 03	..	..	.....	101 50	574	897,910 34	76	17	17	263	147,463 81	8 05
101 05	..	..	.....	122 00	247	664,068 37	65	18	7	682	138,128 31	.....
96 67	..	..	.....	.....	57	53,241 51	27	2	5	257	44,918 35	.....
153 00	..	..	.....	104 30	136	87,766 57	62	14	13	291	109,210 05	.....
100 00	..	..	.....	.....	232	482,724 16	53	18	10	147	214,977 81	.....
490 99	..	..	.....	2,652 66	180	190,441 67	63	9	12	81	25,205 81	.....
.....	..	..	.....	320 15	316	484,655 62	213	34	27	825	260,142 45	.....
11,383 92	..	..	.....	26,221 92	1,530	22,177 65	529	107	164	3,079	1,899,742 33	.....
53,864 28	..	..	.....	77,073 80	9,831	23,898,062 00	5302	514	554	13,394	5,102,659 3.	34 15

APPENDIX E.—Being a return of business transacted by Surrogate Registrars

County or District.	Total number of Probates issued.	Total number of Letters of Administration issued.	Total number of Letters of Guardianship issued.	Total number of Probates and Letters of Administration issued under R.S.O. Cap. 62, s. 73, ss. 1.	Total number of Probates and Letters issued under R.S.O. Cap. 62, s. 73, ss. 2.	Number of Wills proved istration or Guardianship alty valued as			
						$100,000, or over.	From $50,000 to $100,000.	From $25,000 to $50,000.	From $10,000 to $25,000.
Algoma	38	28	.....	9	6	1	.....	.....	2
Brant	114	62	3	13	25	.....	.....	4	8
Bruce	132	43	1	8	15	.....	.....	2	6
Carleton	239	112	4	29	31	2	7	8	25
Dufferin	60	17	.....	7	4	.....	.....	.....	5
Elgin	131	62	1	22	30	.....	1	2	12
Essex	142	79	4	22	28	.....	.....	2	11
Frontenac	108	33	1	8	12	2	3	4	8
Grey	187	65	.....	18	21	.....	2	1	15
Haldimand	58	20	1	6	7	.....	2	.....	3
Halton	56	32	1	5	8	.....	1	5	3
Hastings	115	69	1	14	15	.....	.....	2	9
Huron	178	75	1	25	23	.....	.....	.....	13
Kenora	8	15	.....	8	4	.....	1	1	2
Kent	107	56	1	19	.....	.....	1	7	8
Lambton	129	68	1	12	21	2	2	4	7
Lanark	78	40	.....	3	13	1	1	2	13
Leeds and Grenville	120	46	3	8	15	1	2	2	12
Lennox and Addington	44	19	.....	4	10	.....	1	1	6
Lincoln	131	34	.....	8	9	1	.....	6	9
Manitoulin	8	3	1	2	.....	.....	.....	.....	.....
Middlesex	340	168	2	57	44	2	1	6	34
Muskoka	28	17	.....	9	5	.....	.....	1	2
Nipissing	18	13	.....	4	10	.....	.....	.....	.....
Norfolk	89	28	.....	15	17	.....	.....	1	7
Northumberland and Durham	146	74	1	19	32	1	.....	6	8
Ontario	113	49	.....	11	21	.....	2	3	3
Oxford	138	57	1	9	13	.....	1	1	19
Parry Sound	24	26	.....	12	11	.....	.....	1	3
Peel	66	30	1	8	15	.....	.....	.....	7
Perth	141	45	.....	14	14	.....	.....	1	18
Peterborough	77	28	1	7	14	1	1	.....	4
Prescott and Russell	92	33	.....	9	14	.....	.....	1	7
Prince Edward	59	23	.....	6	9	.....	.....	1	3
Rainy River	16	9	.....	11	4	.....	.....	.....	.....
Renfrew	58	22	1	.....	12	1	2	1	5
Simcoe	233	81	.....	34	39	2	2	3	13
Stormont, Dundas and Glengarry	118	67	.....	12	20	1	3	1	15
Sudbury	10	21	1	.....	.....	.....	.....	.....	1
Temiskaming	13	33	.....	22	14	.....	.....	1	1
Thunder Bay	34	20	.....	2	12	.....	14	2	1
Victoria	61	31	1	13	12	1	1	2	4
Waterloo	160	49	1	11	17	2	1	4	22
Welland	94	57	4	17	15	.....	1	3	7
Wellington	186	61	2	15	29	1	.....	.....	14
Wentworth	238	110	3	18	45	6	10	12	28
York	1,074	728	16	123	263	56	24	52	132
Totals	5,809	2,858	59	708	998	84	87	156	535

throughout the Province of Ontario during the year ending 31st December, 1916.

and Letters of Administration issued where person- follows:				Total amount of personalty devolving.	Total amount of realty to be administered under R.S.O. Cap. 119, s. 3.	Amount of moneys in Court in Surrogate matters, including interest, Con. Rule 769.	Amount earned for.		
From $5,000 to $10,000.	From $1,000 to $5,000.	From $400 to $1,000.	$400 and under.				Registrar's fees.	Judge's fees.	Fees to Crown.
				$ c.	$ c.	$ c	$ c.	$ c.	$ c.
1	25	15	22	257,132 09	132,839 52	.....	768 70	476 70	216 50
16	76	35	40	521,583 34	368,810 15	.....	2,485 88	1,016 75	596 10
13	84	33	38	451,818 00	393,520 54	.....	2,088 82	1,019 50	542 90
38	132	45	98	2,853,157 50	1,128,664 06	.....	4,596 73	3,830 95	2,119 75
7	37	12	16	222,832 83	152,789 84	.....	1,069 06	473 75	240 50
22	67	35	55	656,947 02	488,784 37	.....	2,262 63	1,247 00	641 90
16	75	42	79	543,459 11	641,414 45	9 53	2,635 18	1,694 25	846 90
17	70	16	22	1,024,435 65	385,220 00	.....	2,043 80	1,575 75	766 90
22	113	41	58	813,910 29	573,126 29	.....	2,944 46	1,504 25	830 60
7	37	12	18	3,026,677 96	188,245 00	30 06	1,186 75	730 35	285 50
19	30	12	19	511,675 78	306,097 00	.....	1,424 95	876 75	414 80
16	69	38	51	483,419 00	69,348 00	.....	2,565 19	1,033 00	514 30
31	122	39	49	828,977 60	67,842 00	.....	3,350 57	1,403 75	812 90
1	8	3	7	88,305 00	41,661 00	.....	298 54	191 75	106 98
19	75	38	36	1,489,167 00	298,796 00	.....	1,766 95	1,198 00	735 20
29	72	34	48	1,112,476 15	511,782 02	185 00	2,529 53	1,932 00	985 70
11	53	20	14	978,612 29	255,971 88	.....	2,280 45	1,574 90	694 80
12	84	32	24	884,691 00	74,860 00	.....	2,800 00	1,389 75	730 50
9	25	12	8	319,204 46	170,770 00	.....	892 28	773 42	270 70
22	49	23	25	1,079,288 02	535,445 12	763 39	1,973 96	1,672 25	825 30
1	6	2	2	28,790 00	.....	.....	112 23	48 00	32 30
54	186	82	145	2,286,803 55	1,549,654 53	.....	5,330 74	3,643 75	1,926 70
1	18	8	15	113,090 65	20,650 00	.....	544 69	230 00	128 80
2	11	7	11	36,849 90	13,850 00	.....	294 50	129 50	72 10
9	44	18	38	316,019 39	256,812 45	452 00	1,726 90	768 50	349 10
21	90	50	44	879,442 11	179,424 02	.....	2,908 80	1,647 25	842 40
18	61	34	41	601,329 11	501,409 58	.....	2,274 36	1,190 00	579 00
22	78	25	49	772,060 52	574,471 02	1,581 22	3,376 67	1,476 10	759 00
3	20	11	12	62,057 70	87,399 00	.....	384 40	152 25	100 40
14	32	18	25	315,032 00	420,371 90	.....	1,332 03	698 95	320 50
30	77	26	34	693,244 73	471,542 37	.....	2,701 01	1,174 75	678 80
7	42	15	35	598,869 20	315,868 85	.....	1,573 06	1,008 25	498 60
13	60	24	20	374,235 61	211,000 00	.....	1,516 01	703 25	421 20
11	28	17	22	295,187 24	190,078 36	.....	1,214 87	547 50	256 20
2	8	4	11	32,355 84	.....	162 20	264 87	109 50	56 00
8	33	18	12	747,579 00	188,288 09	.....	1,129 00	983 00	526 60
27	125	78	64	1,203,492 40	784,403 12	.....	3,793 80	2,075 10	1,169 80
18	88	27	32	994,288 29	676,277 50	.....	3,008 10	1,565 25	868 20
1	6	4	20	41,300 83	55,252 45	.....	205 40	94 75	68 40
.....	8	14	22	83,210 38	35,250 00	.....	319 50	183 75	108 60
2	20	12	16	2,411,019 26	127,770 00	.....	577 18	334 70	199 22
7	38	27	13	527,570 25	237,830 40	.....	1,396 75	832 30	427 90
32	87	33	39	1,429,053 33	461,034 50	.....	2,995 14	1,846 00	1,081 50
15	46	36	47	488,511 32	410,839 80	.....	1,875 33	1,052 80	508 70
25	113	39	51	839,732 00	595,292 00	.....	2,803 09	1,524 55	597 50
36	117	55	87	3,445,826 92	1,880,270 24	602 70	4,748 36	3,480 25	2,318 00
163	522	582	307	20,971,831 00	6,636,082 00	.....	24,026 09	35,863 01	13,569 80
870	3,267	1,803	1,941	58,736,552 62	23,667,109 42	3,786 10	114,397 31	88,977 83	41,644 05

APPENDIX F.—Return of fees and emoluments of the Judicial Officers throughout the officers payable by the Province, the County and the

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
ALGOMA:						
Sault Ste. Marie ..	Sheriff	Wm. Carney....	$ c. 2,703 18	$ c. 1,000 00	$ c. 3,703 18	$ c. 3,140 22
	Surrogate Judge ...	Judge Stone	.....	*500 00	664 20	500 00
	Local Master	"	164 20	.....	.....	119 90
	Crown Attorney....	G.W. Goodwin pro	2,529 56	400 00	3,540 76	2,143 19
	Clerk of the Peace .	tem "	611 20	.....	.....	286 57
	Local Resistrar	†C. V. Plummer.	201 31	750 00	2,425 16	951 31
	District Court Clerk	"	705 15	.....	.....	705 15
	Surrogate Registrar	"	768 70	.....	.....	768 70
BRANT:						
Brantford	Sheriff	J. W. Westbrook.	2,457 59	.....	2,457 59	1,680 68
	Surrogate Judge ...	Judge Hardy....	Commuted	875 00	965 40	875 00
	Local Master	"	90 40	.....	.....	71 40
	Crown Attorney....	A. J. Wilkes, K.C.	1,064 27	.....	1,976 41	817 27
	Clerk of the Peace..	"	912 14	.....	.....	509 76
	Local Registrar	‡J. T. Hewitt....	387 47	675 00	4,951 20	1,062 00
	County Court Clerk.	"	1,402 85	.....	.....	1,398 60
	Surrogate Registrar	"	2,485 88	.....	.....	2,418 13
BRUCE:						
Walkerton	Sheriff	D. M. Jermyn ...	2,125 77	.....	2,125 77	1,753 99
	Surrogate Judge ...	¶ Judge Klein....	1,000 00	.....	1,400 00	1,000 00
	Local Master	"	Commuted	400 00	.....	400 00
	Crown Attorney....	Thomas Dixon ..	282 55	.....	1,761 58	182 05
	Clerk of the Peace..	"	1,479 03	.....	.....	882 54
	Local Registrar....	§M. Goetz.....	141 05	675 00	3,658 12	808 05
	County Court Clerk	"	753 25	.....	.....	607 48
	Surrogate Registrar	"	2,088 82	.....	.....	1,745 89
CARLETON:						
Ottawa...	Sheriff	G. C. Richardson	9,317 49	.....	9,317 49	8,007 96
	Surrogate Judge ...	Judge McTavish.	1,300 00	.....	1,300 00	.....
	" "	Judge Gunn.....	1,000 00	.....	1,000 00	.....
	Local Master	J. Bishop, K.C. ..	2,290 94	.....	4,504 80	2,290 94
	Deputy Registrar ..	"	2,213 86	.....	.....	2,213 86
	Crown Attorney....	J. A. Ritchie	1,060 30	.....	2,156 86	819 30
	Clerk of the Peace..	"	1,096 56	.....	.....	711 37
	Deputy Clerk of the Crown	Horace Pratt ...	485 35	450 00	9,278 03	935 35
	County Court Clerk.	"	3,745 95	.....	.....	3,745 95
	Surrogate Registrar	"	4,596 73	.....	.....	4,596 73
DUFFERIN:						
Orangeville	Sheriff	Henry Endacott.	1,164 27	.....	1,164 27	699 55
	Surrogate Judge ...	Judge Fisher....	473 75	.....	513 25	473 75
	Local Master	"	39 50	.....	.....	.....
	Crown Attorney....	J. L. Island	390 76	.....	938 54	329 76
	Clerk of the Peace..	"	547 78	.....	.....	292 39
	Local Registrar	J. A. V. Preston.	24 05	675 00	1,972 09	699 05
	County Court Clerk.	"	203 98	.....	.....	203 98
	Surrogate Registrar	"	1,069 06	.....	.....	1,069 06
ELGIN:						
St. Thomas	Sheriff	‖ Vacant	2,184 87	.....	2,184 87	1,555 73
	Surrogate Judge....	Judge Colter	1,000 00	.....	1,000 00	.....
	Local Master.....	C. F. Maxwell ..	519 60	.....	519 60	396 80
	Crown Attorney....	A. McCrimmon..	1,169 50	.....	2,186 06	928 90
	Clerk of the Peace..	"	1,016 56	.....	.....	540 81
	Local Registrar	David McLaws..	164 90	675 00	3,858 78	711 80
	County Court Clerk.	"	756 25	.....	.....	722 45
	Surrogate Registrar	"	2,262 63	.....	.....	2,258 93

* By R.S.O. Cap. 58, Sec. 17. † Albert Carney, appointed from 1st May, 1917, by O.-in-C. 25th April, 1917. ‡ W. A. Hollinrake, K.C., appointed by O.-in-C. 16th March, 1917. § R. E. Clapp appointed Local Registrar, County Court Clerk, Surrogate Registrar by O.-in-C., 8th Nov., 1916.

Province of Ontario for the year ending 31st December, 1916, and of total earnings of such General Public, respectively, for the same period.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O. cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
642 05	3,782 27	2,181 30	1,600 97	.....	1,600 97	2,477 13	.....	1,226 05	Algoma.
.....	695 20	.....	695 20	.....	695 20	500 00	.....	.....	
75 20	.....	.....	.....	.....	.....	.....	.....	164 20	
.....	2,429 76	472 68	1,957 08	.....	1,957 08	2,518 61	.....	410 95	
.....	.....	.....	.....	.....	.....	500 25	.....	111 25	
.....	2,425 16	380 20	2,044 96	.....	2,044 96	750 00	.....	201 31	
.....	.....	.....	.....	.....	.....	.....	.....	705 15	
.....	.....	.....	.....	.....	.....	.....	.....	768 70	
739 37	2,420 05	160 40	2,259 65	.....	2,259 65	1,059 57	544 17	853 85	Brant.
.....	946 40	.....	946 40	.....	946 40	875 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	90 40	
430 00	2,101 30	598 50	1,502 80	.....	1,502 80	607 30	108 00	348 97	
344 27	.....	.....	.....	.....	.....	171 40	667 67	73 07	
.....	4,878 75	1,381 26	3,497 47	149 49	3,347 98	675 00	.....	387 47	
.....	.....	.....	.....	.....	.....	.....	.....	1,402 85	
.....	.....	.....	.....	.....	.....	.....	.....	2,485 88	
330 19	2,084 18	1,225 40	858 78	.....	858 78	842 33	672 73	610 71	Bruce.
.....	1,400 00	.....	1,400 00	.....	1,400 00	.....	.....	1,000 00	
.....	.....	.....	.....	.....	.....	400 00	.....	.....	
39 95	1,559 40	23 60	1,535 80	.....	1,535 80	282 55	.....	.....	
454 86	.....	.....	.....	.....	.....	168 25	1,281 53	29 25	
.....	3,709 99	664 20	3,045 79	59 15	2,986 64	675 00	.....	141 05	
219 43	.....	.....	.....	.....	.....	.....	.....	753 25	
329 14	.....	.....	.....	.....	.....	.....	.....	2,088 82	
1,929 16	9,937 12	3,455 43	6,481 69	.....	6,481 69	2,586 57	853 08	5,877 84	Carleton.
.....	1,300 00	.....	1,300 00	.....	1,300 00	.....	.....	1,300 00	
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
.....	4,504 80	850 75	3,654 05	.....	3,654 05	.....	.....	2,290 94	
.....	.....	.....	.....	.....	.....	.....	.....	2,213 86	
311 00	2,271 84	247 60	2,024 24	2 42	2,021 82	964 30	.....	96 00	
430 17	.....	.....	.....	.....	.....	206 15	634 51	255 90	
.....	9,278 03	2,019 36	7,258 67	2,932 81	4,325 86	450 00	.....	485 35	
.....	.....	.....	.....	.....	.....	.....	.....	3,745 95	
.....	.....	.....	.....	.....	.....	.....	.....	4,596 73	
458 56	1,158 11	469 22	688 89	.....	688 89	554 37	328 95	270 95	Dufferin.
.....	473 75	.....	473 75	.....	473 75	.....	.....	473 75	
.....	.....	.....	.....	.....	.....	.....	.....	39 50	
109 40	1,012 05	15 80	996 25	.....	996 25	126 68	183 03	81 05	
280 50	.....	.....	.....	.....	.....	65 10	428 73	53 95	
5 95	2,038 03	666 86	1,371 17	.....	1,371 17	675 00	.....	24 05	
21 32	.....	.....	.....	.....	.....	.....	.....	203 98	
38 67	.....	.....	.....	.....	.....	.....	.....	1,069 06	
737 20	2,292 93	601 97	1,690 96	.....	1,690 96	1,007 84	603 89	573 14	Elgin.
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
38 26	435 06	150 00	285 06	.....	285 06	.....	.....	519 60	
295 30	2,290 20	570 72	1,719 48	.....	1,719 48	1,021 50	43 85	104 15	
525 19	.....	.....	.....	.....	.....	114 80	848 96	52 80	
134 80	3,975 66	574 80	3,400 86	130 17	3,270 69	675 00	.....	164 90	
66 93	.....	.....	.....	.....	.....	.....	.....	756 25	
80 75	.....	.....	.....	.....	.....	.....	.....	2,262 63	

¶Judge Greig appointed Surrogate Judge and Local Master pro tem. by O.-in-C., 31st Oct., 1916.
¡A. McCrimmon acting.

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
ESSEX:						
Sandwich.	Sheriff	*J. E. D'Avignon	5,507 47	.....	5,507 47	4,330 30
	Surrogate Judge	Judge Dromgole	1,000 00	.....	1,248 53	1,000 00
	Local Master	"	248 53	.....	.....	213 43
	Crown Attorney	J. H. Rodd	1,464 90	.....	2,565 56	1,036 10
	Clerk of the Peace.	"	1,100 66	.....	.....	860 46
	Local Registrar	Henry Clay	666 97	675 00	5,441 30	1,341 30
	County Court Clerk	"	1,464 15	.....	.....	1,464 15
	SurrogateRegistrar	"	2,635 18	.....	.....	2,635 18
FRONTENAC						
Kingston .	Sheriff	Thomas Dawson	2,372 13	.....	2,372 00	1,953 75
	Surrogate Judge	Judge Lavell	1,000 00	.....	1,000 00	.....
	Local Master	J.B.Walkem,K.C.	256 70	.....	256 70	231 60
	Crown Attorney	J. L. Whiting,K.C.	198 00	.....	1,180 33	153 00
	Clerk of the Peace.	"	982 33	.....	.....	605 85
	Local Registrar	T. M. Asselstine	317 75	675 00	1,890 01	992 75
	County Court Clerk	"	897 26	.....	.....	897 26
GREY:	SurrogateRegistrar	Miss H. Fraser	2,043 80	.....	2,043 80	2,043 80
Owen Sound..	Sheriff	T. I. Thomson	2,237 38	.....	2,237 38	1,720 43
	Surrogate Judge	Judge Widdifield.	1,000 00	.....	1,130 20	1,000 00
	Local Master	"	130 20	.....	.....	75 80
	Crown Attorney	T. H. Dyre	666 95	.....	2,168 11	484 10
	Clerk of the Peace.	"	1,501 16	.....	.....	1,151 52
	Local Registrar	W. A. Bishop	98 40	750 00	4,698 61	848 40
	County Court Clerk	"	815 75	.....	.....	815 75
	SurrogateRegistrar	"	2,944 46	.....	.....	2,944 46
HALDIMAND						
Cayuga ..	Sheriff	M. McConnell	1,957 48	.....	1,957 48	1,678 10
	Surrogate Judge	†Judge Hopkins	730 35	.....	735 35	730 35
	Local Master	"	5 00	.....	.....	5 00
	Crown Attorney	Harrison Arrell.	430 15	.....	1,772 47	302 65
	Clerk of the Peace.	"	1,342 32	.....	.....	1,038 27
	Local Registrar	J. C. Eccles	140 00	600 00	2,626 25	740 00
	County Court Clerk	"	699 50	.....	.....	643 10
	SurrogateRegistrar	"	1,186 75	.....	.....	1,169 05
HALTON:						
Cayuga ...	Sheriff	S. Webster	1,642 00	.....	1,642 00	1,160 13
	Surrogate Judge	Judge Elliott	876 75	.....	904 95	876 75
	Local Master	"	28 20	.....	.....	6 50
	Crown Attorney	W. I. Dick	334 90	.....	1,360 03	180 15
	Clerk of the Peace.	"	1,025 13	.....	.....	597 94
	Local Registrar	W. J. McClenahan	61 40	600 00	2,496 00	661 40
	County Court Clerk	"	409 65	.....	.....	409 65
	SurrogateRegistrar	"	1,424 95	.....	.....	1,424 95
HASTINGS:						
Belleville.	Sheriff	M. B. Morrison	2,748 23	.....	2,748 23	1,828 70
	Surrogate Judge	‡Judge Wills	Commuted	985 00	985 00	.....
	Local Master	S. S. Lazier	Commuted	3,000 00	.....	3,000 00
	Deputy Registrar	"				
	Crown Attorney	Wm Carnew	1,273 89	.....	2,535 59	1,087 38
	Clerk of the Peace.	"	1,261 70	.....	.....	943 20
	Deputy Clerk of the Crown	John Williams	101 80	450 00	4,079 76	551 80
	County Court Clerk	"	962 77	.....	.....	962 77
	SurrogateRegistrar	"	2,565 19	.....	.....	2,565 19

*C. N. Anderson Appointed by O.-in-C. 12th March, 1917. †Appointed Surrogate Judge and Local Master by O.-in-C. 25th March 1916. ‡Appointed Surrogate Judge by O.-in-C. 16th May, 1916.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O. cap. 17.	Net Income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
981 36	5,311 66	648 04	4,663 62	.....	4,663 62	1,593 92	583 03	3,330 52	Essex.
.....	1,345 43	.....	1,345 43	.....	1,345 43	.....	.....	1,000 00	
132 00	.....	.....	.....	.....	.....	.....	.....	248 53	
354 00	2,491 91	822 00	1,669 91	.....	1,669 91	1,269 90	.....	195 00	
241 35	.....	.....	.....	.....	.....	130 25	807 00	163 41	
.....	5,441 30	927 56	4,513 74	656 87	3,856 87	675 00	.....	666 97	
.....	.....	.....	.....	.....	.....	.....	.....	1,464 15	
.....	.....	.....	.....	.....	.....	.....	.....	2,635 18	
435 25	2,389 00	482 00	1,907 00	.....	1,907 00	875 27	914 00	582 86	Frontenac.
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
.....	231 60	.....	231 60	.....	231 60	.....	.....	256 70	
84 40	1,190 55	50 00	1,140 55	.....	1,140 55	198 00	.....	.....	
347 30	.....	.....	.....	.....	.....	91 45	890 88	.....	
.....	1,890 01	110 00	1,780 01	.....	1,780 01	675 00	.....	317 75	
.....	.....	.....	.....	.....	.....	.....	.....	897 26	
27 15	2,070 95	200 00	1,870 95	.....	1,870 95	.....	.....	2,043 86	
758 11	2,478 54	1,230 14	1,248 40	.....	1,248 40	640 73	876 37	720 28	
.....	1,148 40	.....	1,148 40	.....	1,148 40	.....	.....	1,000 00	
72 60	.....	.....	.....	.....	.....	.....	.....	130 20	
235 10	2,466 94	526 33	1,940 61	.....	1,940 61	416 80	163 35	86 80	
596 22	.....	.....	.....	.....	.....	89 35	1,295 39	116 42	
.....	4,608 61	735 20	3,873 41	336 71	3,536 70	750 00	.....	98 40	
.....	.....	.....	.....	.....	.....	.....	.....	815 75	
.....	.....	.....	.....	.....	.....	.....	.....	2,944 46	
340 10	2,018 20	383 02	1,635 18	.....	1,635 18	620 16	866 19	471 13	Haldimand.
.....	735 35	.....	735 35	.....	735 35	.....	.....	730 35	
.....	.....	.....	.....	.....	.....	.....	.....	5 00	
105 34	1,760 66	433 00	1,327 66	.....	1,327 66	352 83	9 32	68 00	
314 40	.....	.....	.....	.....	.....	100 57	1,120 00	121 75	
6 00	2,623 05	214 60	2,408 45	.....	2,408 45	600 00	.....	140 00	
63 90	.....	.....	.....	.....	.....	.....	.....	699 50	
1 00	.....	.....	.....	.....	.....	.....	.....	1,186 75	
273 61	1,433 74	715 77	717 97	.....	717 97	554 55	437 33	650 12	Halton.
.....	907 00	.....	907 00	.....	907 00	.....	.....	876 75	
23 75	.....	.....	.....	.....	.....	.....	.....	28 20	
74 80	1,285 98	138 30	1,147 68	.....	1,147 68	303 90	.....	31 00	
453 09	.....	.....	.....	.....	.....	37 30	978 18	9 65	
.....	2,496 00	157 30	2,338 70	.....	2,338 70	600 00	.....	61 40	
.....	.....	.....	.....	.....	.....	.....	.....	409 65	
.....	.....	.....	.....	.....	.....	.....	.....	1,424 95	
821 24	2,649 94	881 10	1,768 84	.....	1,768 84	1,216 99	959 85	571 39	Hastings
.....	985 00	.....	985 00	.....	985 00	985 00	.....	.....	
.....	3,000 00	649 00	2,351 00	.....	2,351 00	3,000 00	.....	.....	
349 02	2,707 80	429 05	2,278 75	27 87	2,250 88	1,020 47	.....	253 42	
328 20	.....	.....	.....	.....	.....	211 70	1,050 00	.....	
.....	4,079 76	488 59	3,591 17	195 58	3,395 59	450 00	.....	101 80	
.....	.....	.....	.....	.....	.....	.....	.....	962 77	
.....	.....	.....	.....	.....	.....	.....	.....	2,565 19	

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services
			$ c.	$ c.	$ c.	$ c.
HURON:						
Goderich..	Sheriff	R. G. Reynolds .	2,668 20	.....	2,668 20	2,499 20
	Surrogate Judge ..	*Judge Dickson.	Commuted	1,000 00	1,022 50	1,000 00
	Local Master	"	22 50	.....	.....	.....
	Crown Attorney ..	C. Seager.....	996 44	.....	2,324 95	743 48
	Clerk of the Peace..	"	1,328 51	.....	.....	1,213 65
	Local Registrar...	D. McDonald....	48 00	750 00	4,539 42	798 00
	County Court Clerk.	"	390 85	.....	.....	390 85
	SurrogateRegistrar	"	3,350 57	.....	.....	3,350 57
KENORA:						
Kenora...	Sheriff	J. W. Humble ...	1,240 88	1,000 00	2,240 88	1,604 95
	Surrogate Judge ..	Judge Chapple ..	.....	†500 00	737 00	500 00
	Local Master	" ..	237 00	.....	.....	237 00
	Crown Attorney...	J.F.MacGillivray	174 14	.....	648 20	144 64
	Clerk of the Peace.	K.C."	224 06	250 00	.....	363 40
	Local Registrar...	C. W. Chadwick.	60 22	700 00	1,298 33	760 22
	District Court Cl'k.	" .	239 57	.....	.....	239 57
	SurrogateRegistrar	" .	298 54	.....	.....	298 54
KENT:						
Chatham..	Sheriff	J. R. Gemmill..	2,700 59	.....	2,700 59	2,198 66
	Surrogate Judge..	‡ JudgeStamworth	1,000 00	.....	1,000 00	1,000 00
	Local Master.....	Thos. Scullard..	10 80	.....	10 80	10 80
	Crown Attorney...	H. D. Smith	1,415 27	.....	2,684 59	1,386 59
	Clerk of the Peace.	"	1,269 32	.....	.....	866 90
	Local Registrar ..	James Holmes ..	131 50	675 00	3,540 05	806 50
	County Court Clerk.	" .	966 60	.....	.....	966 60
	Surrogate Regist'r.	" ..	1,766 95	.....	.....	1,766 95
LAMBTON:						
Sarnia....	Sheriff	James Flintoft..	2,232 00	.....	2,232 00	1,588 55
	Surrogate Judge...	Judge MacWatt .	Commuted	1,000 00	1,240 72	1,000 00
	Local Master	" ..	240 72	.....	.....	240 72
	Crown Attorney...	¶ F. W. Willson .	831 70	.....	2,011 01	521 40
	Clerk of the Peace.	"	1,179 31	.....	.....	1,085 26
	Local Registrar...	Alex Saunders..	117 40	675 00	4,046 70	792 40
	County Court Clerk.	" ..	724 77	.....	.....	724 77
	Surrogate Regist'r.	" ..	2,529 53	.....	.....	2,529 53
LANARK:						
Perth.....	Sheriff	D. G. MacMartin.	1,851 93	.....	1,851 93	1,498 63
	Surrogate Judge...	Judge Scott.....	1,000 00	.....	1,000 00	1,000 00
	Local Master.....	Judge Senkler...	20 60	.....	20 60	3 00
	Crown Attorney...	Alex. C. Shaw ..	825 12	.....	1,531 28	574 07
	Clerk of the Peace	"	706 16	.....	.....	454 58
	Local Registrar . .	W. P. McEwen..	114 30	675 00	3,503 75	758 30
	County Court Clerk.	" ..	434 00	.....	.....	325 50
LEEDS AND GRENVILLE:	Surrogate Regist'r.	" ..	2,280 45	.....	.....	1,787 45
Brockville.	Sheriff	J. A. McCammon	2,906 02	.....	2,906 02	2,286 02
	Surrogate Judge...	Judge McDonald.	Commuted	960 00	960 00	960 00
	Local Masters...	Judge Dowsley..	26 90	.....	26 90	26 90
		Judge Reynolds.	211 60	.....	211 60	174 70
	Crown Attorney...	M. M. Brown....	913 21	.....	2,033 72	777 85
	Clerk of the Peace.	"	1,120 51	.....	.....	640 04
	Local Registrar ...	A. E. Baker	168 40	750 00	4,820 90	730 90
	County Court Clerk.	" ..	1,101 95	.....	.....	1,101 95
	Surrogate Regist'r.	"	2,800 55	.....	.....	2,800 55

* Appointed by O.-in-C. 31st May, 1916. † By R.S.O. Cap. 58, Sec. 17. ‡ Appointed by O.-in-C. 4th April, 1916. ¶ Appointed by O.-in-C., 12th April.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O., cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
52 30	2,551 50	633 37	1,918 13	.....	1,918 13	865 53	1,079 77	722 90	Huron
.....	1,000 00	.....	1,000 00	.....	1,000 00	1,000 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	22 50	
335 79	2,292 92	225 13	2,067 79	6 77	2,061 02	330 53	654 41	11 50	
.....	.....	.....	.....	.....	.....	102 85	1,100 00	125 66	
.....	4,539 42	969 80	3,569 62	184 81	3,384 81	750 00	.....	48 00	
.....	.....	.....	.....	.....	.....	.....	.....	390 85	
.....	.....	.....	.....	.....	.....	.....	.....	3,350 57	
699 79	2,304 74	711 35	1,593 39	.....	1,593 39	1,784 02	.....	456 86	Kenora
.....	737 00	10 00	727 00	.....	727 00	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	237 00	
66 00	688 33	10 95	677 38	.....	677 38	154 14	.....	20 00	
114 29	.....	.....	.....	.....	.....	453 69	.....	20 37	
.....	1,338 68	375 00	963 68	.....	963 68	700 00	.....	60 22	
40 35	.....	.....	.....	.....	.....	.....	.....	239 57	
.....	.....	.....	.....	.....	.....	.....	.....	298 54	
526 75	2,725 41	794 89	1,930 52	.....	1,930 52	749 46	833 83	1,117 30	Kent
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
16 50	27 30	.....	27 30	.....	27 30	.....	.....	10 80	
159 54	2,715 13	780 00	1,935 13	.....	1,935 13	678 07	.....	737 20	
302 10	.....	.....	.....	.....	.....	189 15	1,000 00	80 17	
.....	3,540 05	724 00	2,816 05	31 60	2,784 45	675 00	.....	131 50	
.....	.....	.....	.....	.....	.....	.....	.....	966 60	
.....	.....	.....	.....	.....	.....	.....	.....	1,766 95	
741 26	2,329 81	720 32	1,609 49	.....	1,609 49	953 26	499 80	779 94	Lambton
.....	1,267 42	.....	1,264 72	.....	1,264 72	1,000 00	.....	.....	
26 70	.....	2 70	.....	.....	.....	.....	.....	240 72	
344 00	2,034 11	284 66	1,747 45	.....	1,747 45	791 70	10 00	.....	
81 45	.....	.....	.....	.....	.....	.....	.....	.....	
.....	4,046 70	745 00	3,301 70	110 34	3,191 36	675 00	.....	117 40	
.....	.....	.....	.....	.....	.....	.....	.....	724 77	
.....	.....	.....	.....	.....	.....	.....	.....	2,529 53	
434 13	1,932 76	811 30	1,121 46	.....	1,121 46	676 53	626 67	548 73	Lanark
.....	1,000 00	.....	1,000 00	.....	.....	.....	.....	1,000 00	
23 51	26 51	.....	26 51	.....	26 51	.....	.....	20 60	
322 82	1,604 98	75 95	1,529 03	.....	1,529 03	650 49	174 63	.....	
253 51	.....	.....	.....	.....	.....	120 85	519 25	66 06	
.....	3,455 85	370 00	3,085 85	67 17	3,018 68	675 00	.....	114 30	
110 25	.....	.....	.....	.....	.....	.....	.....	434 00	
474 35	.....	.....	.....	.....	.....	.....	.....	2,280 45	
498 06	2,784 08	1,072 33	1,711 75	.....	1,711 75	1,141 54	732 51	1,031 97	Leeds and Grenville
.....	960 00	.....	960 00	.....	960 00	960 00	.....	.....	
2 30	29 20	.....	29 20	.....	29 20	.....	.....	26 90	
16 40	191 10	.....	191 10	.....	191 10	.....	.....	211 60	
127 28	1,896 58	398 04	1,498 54	.....	1,498 54	884 46	.....	28 75	
351 41	.....	.....	.....	.....	.....	241 18	797 05	82 28	
37 20	4,670 60	718 92	3,951 68	375 84	3,575 84	750 00	.....	168 40	
.....	.....	.....	.....	.....	.....	.....	.....	1,101 95	
.....	.....	.....	.....	.....	.....	.....	.....	2,800 55	

APPENDIX F—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
LENNOX & ADDINGTON: Napanee.	Sheriff	G. D. Hawley	1,347 21		1,347 21	1,067 36
	Surrogate Judge	Judge Madden	773 42		773 42	773 42
	Local Master	S. S. Lazier	18 44		18 44	18 44
	Crown Attorney	*U. M. Wilson	205 80		1,106 42	179 80
	Clerk of the Peace.	"	900 62			426 34
	Local Registrar	W. P. Deroche	63 40	600 00	2,123 38	663 40
	County Court Clerk.	"	567 70			567 70
	Surrogate Regist'r.	"	892 28			892 28
LINCOLN: St. Catharines.	Sheriff	Henry O'Loughlin	2,911 08		2,911 08	1,630 66
	Surrogate Judge	†Judge Campbell.	Commuted	900 00		900 00
	Local Master	"	93 80			77 00
	Crown Attorney	M. Brennan	819 00		2,127 07	624 00
	Clerk of the Peace.	"	1,308 07			845 90
	Local Registrar	Johnson Clench	569 10	675 00	4,017 61	1,134 60
	County Court Clerk	"	799 55			700 15
	Surrogate Regist'r.	"	1,973 96			1,973 96
MANITOULIN: Gore Bay.	Sheriff	J. Haddow Fell	717 52	950 00	1,667 52	1,595 75
	Surrogate Judge	Judge Hewson		‡500 00	516 00	500 00
	Local Master	"	16 00			
	Crown Attorney	§W. F. McRae	499 10	350 00	1,040 93	639 10
	Clerk of the Peace.	"	291 83			162 48
	Local Registrar	C. C. Platt		850 00	1,037 63	850 00
	District Court Clerk	"	75 40			75 40
	Surrogate Regist'r.	"	112 23			112 23
MIDDLESEX: London.	Sheriff	D. M. Cameron	4,798 16		4,798 16	3,384 74
	Surrogate Judges	Judge Macbeth	1,300 00		1,300 00	1,300 00
		Judge Elliott *	394 40		394 40	394 40
		Judge Judd	164 39		164 39	164 39
	Local Master	H. S. Blackburn	1,617 00		2,076 79	1,308 40
	Deputy Registrar.	"	459 79			412 99
	Crown Attorney	J. B. McKillop	1,351 29		3,093 00	823 79
	Clerk of the Peace.	"	1,741 71			952 17
	Deputy Clerk of the Crown	Edmund Weld	156 49	500 00	7,666 83	656 49
	County Court Clerk.	"	1,679 60			1,574 60
	SurrogateRegistrar	"	5,330 74			5,052 84
MUSKOKA: Bracebridge.	Sheriff	D. E. Bastedo	1,254 22	750 00	2,004 22	1,658 31
	Surrogate Judge	Judge Mahaffy		‡500 00	519 00	500 00
	Local Master	"	19 00			
	Crown Attorney	Thomas Johnson	254 89	250 00	895 91	422 89
	Clerk of the Peace	"	391 02			173 82
	Local Registrar	Isaac Huber	135 02	600 00	1,551 87	735 02
	District Court Cl'k.	"	272 16			272 16
	SurrogateRegistrar	"	544 69			544 69
NIPISSING: North Bay	Sheriff	H. C. Varin	1,206 22	800 00	2,006 22	1,840 14
	Surrogate Judge	Judge Valin		‡500 00	522 80	500 00
	Local Master	"	22 80			22 80
	Crown Attorney	T. E. McKee	622 00	250 00	1,364 30	760 94
	Clerk of the Peace.	"	492 30			193 90
	Local Registrar	T. J. Bourke	147 78	150 00	1,928 43	293 78
	District Court Cl'k	"	886 15	450 00		1,260 13
	SurrogateRegistrar	"	294 50			294 50

* Appointed by O.-in-C. 25th March, 1916. † Appointed Surrogate Judge by O.-in-C., 5th May.
‡ By R.S.O. Cap. 58. Sec. 17. § J. H. Craig appointed pro tem. by O.-in-C. 6th Sept., 1916.
* Died May 1916, see O.-in-C. 12th Dec., 1916.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O., cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
334 97	1,402 33	317 29	1,085 04	.....	1,085 04	491 69	515 07	340 45	Lennox and Addington.
.....	773 42	.....	773 42	.....	773 42	.....	.....	773 42	
.....	18 44	4 50	13 94	.....	13 94	.....	.....	18 44	
.....	606 14	55 08	551 06	.....	551 06	118 80	.....	87 00	
.....	.....	.....	.....	.....	.....	53 50	793 62	53 50	
.....	2,123 38	202 38	1,921 00	.....	1,921 00	600 00	.....	63 40	
.....	.....	.....	.....	.....	.....	.....	.....	567 70	
.....	.....	.....	.....	.....	.....	.....	.....	892 28	
772 10	2,402 76	494 52	1,908 24	.....	1,908 24	992 74	812 50	1,105 84	Lincoln.
.....	.....	.....	.....	.....	.....	900 00	.....	.....	
.....	77 00	.....	77 00	.....	77 00	.....	.....	93 80	
328 00	2,451 19	560 80	1,890 39	.....	1,890 39	708 00	111 00	.....	
653 29	.....	.....	.....	.....	.....	306 80	822 27	179 00	
40 00	3,880 11	522 25	3,357 86	121 57	3,236 29	675 00	.....	569 10	
31 40	.....	.....	.....	.....	.....	.....	.....	799 55	
.....	.....	.....	.....	.....	.....	.....	.....	1,973 96	
165 43	1,761 18	117 40	1,643 78	.....	1,643 78	1,566 55	.....	100 97	Manitoulin.
.....	500 00	.....	500 00	.....	500 00	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	16 00	
95 00	897 47	73 45	824 02	.....	824 02	749 10	.....	.....	
150 89	.....	.....	.....	.....	.....	291 83	.....	.....	
.....	1,037 63	.....	1,037 63	.....	1,037 63	850 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	75 40	
.....	.....	.....	.....	.....	.....	.....	.....	112 23	
1,207 86	4,592 60	1,601 52	2,991 08	.....	2,991 08	1,272 97	1,785 07	1,740 12	Middlesex.
.....	1,300 00	.....	.....	.....	1,300 00	.....	.....	1,300 00	
.....	394 40	.....	.....	.....	394 40	.....	.....	394 40	
.....	164 39	.....	.....	.....	164 39	.....	.....	164 39	
.....	1,721 39	374 00	1,347 39	.....	1,347 39	.....	.....	1,617 00	
.....	.....	.....	.....	.....	.....	.....	.....	459 79	
647 18	3,290 58	1,250 06	2,040 58	4 05	2,036 53	1,280 46	31 33	39 50	
867 44	.....	.....	.....	.....	.....	215 80	1,490 44	35 47	
.....	7,443 93	2,500 00	4,943 93	871 97	4,071 96	500 00	.....	156 49	
.....	.....	.....	.....	.....	.....	.....	.....	1,679 60	
160 00	.....	.....	.....	.....	.....	.....	.....	5,530 74	
335 42	1,993 73	1,113 00	880 73	.....	880 73	1,778 77	.....	225 45	Muskoka.
.....	500 00	.....	.....	.....	500 00	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	19 00	
57 35	823 11	15 75	807 36	.....	807 36	504 89	.....	.....	
169 05	.....	.....	.....	.....	.....	351 79	.....	39 23	
.....	1,551 87	35 11	1,516 76	.....	1,516 76	600 00	.....	135 02	
.....	.....	.....	.....	.....	.....	.....	.....	272 16	
.....	.....	.....	.....	.....	.....	.....	.....	544 69	
408 56	2,248 70	993 75	1,254 95	.....	1,254 95	1,676 57	.....	329 65	Nipissing.
.....	522 80	.....	522 80	.....	522 80	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	22 80	
141 30	1,251 94	100 00	1,151 94	.....	1,151 94	794 00	.....	78 00	
155 80	.....	.....	.....	.....	.....	488 55	.....	3 75	
.....	1,848 41	126 80	1,721 61	.....	1,721 61	150 00	.....	147 78	
.....	.....	.....	.....	.....	.....	450 00	.....	886 15	
.....	.....	.....	.....	.....	.....	.....	.....	294 50	

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
NORFOLK:						
Simcoe ...	Sheriff	F. S. Snider	1,981 75	.....	1,981 75	1,614 05
	Surrogate Judge ..	Judge Boles.....	768 50	.....	867 30	768 50
	Local Master.....	"	98 80	.....	.....	76 60
	Crown Attorney...	T. R. Slaght, K.C.	830 90	.....	2,898 24	566 90
	Clerk of the Peace.	"	2,067 34	.....	.....	1,302 61
	Local Registrar ..	C. C. Rapelje....	37 75	675 00	3,123 30	706 25
	County Court Cl'k.	"	683 65	.....	.....	589 35
	SurrogateRegistrar	"	1,726 90	.....	.....	1,294 50
NORTHUMBERLAND AND DURHAM:	Sheriff	D. J. Nesbitt.....	3,137 15	.....	3,137 15	2,707 12
	Surrogate Judge...	Judge Ward.....	Commuted	1,000 00	1,000 00	1,000 00
	Local Master	Judge Roger.....	47 80	.....	47 80	28 10
Cobourg ..	Crown Attorney...	W. F. Kerr.....	555 38	.....	1,405 86	366 68
	Clerk of the Peace.	"	850 48	.....	.....	489 92
	Local Registrar ..	John T. Field ...	124 90	750 00	4,374 60	874 90
	County Court Clerk	"	590 90	.....	.....	590 90
	SurrogateRegistrar	"	2,908 80	.....	.....	2,908 80
ONTARIO:						
Whitby ..	Sheriff	J. F. Paxton	1,886 34	.....	1,886 34	1,516 65
	Surrogate Judge...	G. Y. Smith.....	1,000 00	.....	1,157 50	1,000 00
	Local Master .. .	"	157 50	.....	.....	157 50
	Crown Attorney...	J.E.Farewell, KC	591 19	.....	1,925 23	428 19
	Clerk of the Peace.	"	1,334 04	.....	.....	871 01
	Local Registrar...	Horace Bascom..	35 40	675 00	3,495 01	710 40
	County Court Cl'k.	"	510 25	.....	.....	510 25
	SurrogateRegistrar	"	2,274 36	.....	.....	2,274 36
OXFORD:						
Woodstock	Sheriff	Wm. McGhee....	2,719 37	.....	2,719 37	2,177 46
	Surrogate Judge ..	*Judge Wallace.	Commuted	1,000 00	1,099 40	1,000 00
	Local Master	"	99 40	.....	.....	40 50
	Deputy Registrar..	W. T. McMullen.	46 90	.....	46 90	32 35
	Crown Attorney...	R. N. Ball	617 28	.....	1,985 52	571 08
	Clerk of the Peace.	"	1,368 24	.....	.....	908 11
	Deputy Clerk of the Crown.....	James Canfield..	217 85	450 00	4,902 27	476 00
	County Court Clerk	"	857 75	.....	.....	690 00
PARRY SOUND:	SurrogateRegistrar	"	3,376 67	.....	.....	2,700 00
Parry Sound	Sheriff	Sam'l Armstrong	2,945 09	750 00	3,695 09	3,235 67
	Surrogate Judge ..	Judge Powell....	.....	†500 00	509 40	500 00
	Local Master.....	"	9 40	.....	.....	9 40
	Crown Attorney...	W. L. Haight. ..	671 56	250 00	1,337 95	861 06
	Clerk of the Peace.	"	416 39	.....	.....	255 94
	Local Registrar. ‡	Frederick Tasker	53 53	600 00	1,382 78	653 50
	District Court Cl'k.	"	344 85	.....	.....	344 85
	SurrogateRegistrar	"	384 40	.....	.....	384 40
PEEL:		[son				
Brampton.	Sheriff	Nathan Hender-	1,580 11	.....	1,580 11	1,272 43
	Surrogate Judge...	‖Judge Justin...	698 95	.....	698 95	698 95
	Local Master	Judge McGibbon.	26 70	.....	26 70	26 70
	Crown Attorney..§	Walker S.Morphy	261 56	.....	852 73	199 63
	Clerk of the Peace.	"	591 17	.....	852 73	507 41
	Local Registrar...	J. B. Dixon.....	110 00	600 00	2,344 16	710 00
	County Court Cl'k.	"	302 13	.....	.....	302 13
	SurrogateRegistrar	"	1,332 03	.....	.....	1,332 03

*Judge Wallace to act as Local Master in Mr. McMullen's absence on military service, by O.-in-C. 14th March, 1916. †By R.S.O. Cap. 58, Sec. 17. ‡ Appointed by O.-in-C. 6th July, 1916. ‖Judge Justin appointed Surrogate Judge by O.-in-C., 3rd Jan., 1917, and Local Master by O.-in C., 8th May, 1917. §Appointed by O.-in-C., 14th March.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts,	Amount paid to Province under R.S.O. Cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
451 18	2,065 23	690 81	1,374 42	.....	1,374 42	729 82	699 98	551 95	Norfolk.
.....	904 60	9 50	895 10	.....	895 10	.....	.....	768 50	
59 50	.....	.....	.....	.....	.....	.....	.....	98 80	
524 35	3,148 01	662 39	2,485 62	48 56	2,437 06	668 25	149 00	13 65	
754 15	.....	.....	.....	.....	.....	137 05	1,865 50	64 79	
84 20	3,281 48	36 41	3,245 07	99 01	3,146 06	675 00	.....	37 75	
130 65	.....	.....	.....	.....	.....	.....	.....	683 65	
476 53	.....	.....	.....	.....	.....	.....	.....	1,726 90	
751 53	3,458 65	1,473 05	1,985 60	.....	1,985 60	848 79	873 60	1,414 76	Northumberland and Durham.
.....	1,000 00	.....	1,000 00	.....	1,000 00	1,000 00	.....	.....	
14 20	42 30	.....	42 30	.....	42 30	.....	.....	47 80	
292 52	1,524 19	379 51	1,144 68	.....	1,144 68	452 00	75	102 63	
375 07	.....	.....	.....	.....	.....	102 83	649 31	98 34	
.....	4,374 60	656 20	3,718 40	259 20	3,459 20	750 00	.....	124 90	
.....	.....	.....	.....	.....	.....	.....	.....	590 90	
.....	.....	.....	.....	.....	.....	.....	.....	2,908 80	
383 29	1,899 94	650 68	1,249 26	.....	1,249 26	749 59	587 96	548 79	Ontario.
.....	1,167 50	.....	1,167 50	.....	1,167 50	.....	.....	1,000 00	
10 00	.....	.....	.....	.....	.....	.....	.....	157 50	
101 65	1,820 55	483 68	1,336 87	.....	1,386 87	426 19	.....	165 00	
419 70	.....	.....	.....	.....	.....	245 89	1,081 35	6 80	
.....	3,495 01	526 00	2,969 01	46 91	2,922 10	675 00	.....	35 40	
.....	.....	.....	.....	.....	.....	.....	.....	510 25	
.....	.....	.....	.....	.....	.....	.....	.....	2,274 36	
656 25	2,833 71	1,193 36	1,640 35	.....	1,640 35	835 65	761 13	1,122 59	Oxford.
.....	1,236 90	50 00	1,186 40	.....	1,186 40	1,000 00	.....	.....	
196 40	.....	.....	.....	.....	.....	.....	.....	99 40	
27 90	60 25	.....	60 20	.....	60 25	.....	.....	46 90	
191 70	2,170 72	.....	2,170 72	17 07	2,153 65	199 28	.....	418 00	
499 83	.....	.....	.....	.....	.....	120 38	1,123 50	124 36	
90 00	4,706 00	336 80	4,369 20	584 60	3,784 60	450 00	.....	217 85	
180 00	.....	.....	.....	.....	.....	.....	.....	857 75	
570 00	.....	.....	.....	.....	.....	.....	.....	3,376 67	
702 02	3,937 69	1,788 29	2,149 40	.....	2,149 40	2,882 06	.....	813 03	Parry Sound.
.....	509 40	.....	509 40	.....	509 40	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	9 40	
174 34	1,483 60	175 00	1,308 60	.....	1,308 60	796 06	.....	125 50	
192 26	.....	.....	.....	.....	.....	401 89	.....	14 50	
.....	1,382 78	10 00	1,372 78	.....	1,372 78	600 00	.....	53 53	
.....	.....	.....	.....	.....	.....	.....	.....	344 85	
.....	.....	.....	.....	.....	.....	.....	.....	384 40	
306 99	1,579 42	783 70	795 72	.....	795 72	443 00	579 08	558 03	Peel.
.....	698 95	.....	698 95	.....	698 95	.....	.....	698 95	
.....	21 70	.....	26 70	.....	26 70	.....	.....	26 70	
52 35	935 88	229 61	706 27	.....	706 27	191 99	69 65	.....	
176 49	.....	.....	.....	.....	.....	32 75	558 42	.....	
.....	2,344 16	143 60	2,200 56	.....	2,200 56	600 00	.....	110 00	
.....	.....	.....	.....	.....	.....	.....	.....	302 13	
.....	.....	.....	.....	.....	.....	.....	.....	1,332 03	

APPENDIX F.—Report of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
PERTH: Stratford.	Sheriff	ThomasMagwood	2,226 71	.....	2,226 71	1,634 48
	Surrogate Judge	Judge Barron	commuted	873 00	1,723 00	873 00
	Local Master	"	commuted	850 00	.....	850 00
	Crown Attorney	G. G. McPherson K.C.	475 90	.....	2,027 59	467 00
	Clerk of the Peace.	"	1,551 69	.....	.....	899 91
	Local Registrar	E. Sydney Smith,	292 10	675 00	4,736 36	955 61
	County Court Clerk	" K.C.	1,068 25	.....	.....	819 70
	SurrogateRegistrar	"	2,701 01	.....	.....	2,578 98
PETER-BOROUGH: Peterboro:	Sheriff	J. A. Hall	2,452 66	.....	2,452 66	1,930 75
	Surrogate Judge	Judge Huycke	1,000 00	.....	1,955 00	1,000 00
	Local Master	"	955 00	.....	.....	166 50
	Crown Attorney	G. W. Hatton	918 10	.....	2,309 29	710 80
	Clerk of the Peace.	"	1,391 19	.....	.....	798 02
	Local Registrar	G. J. Sherry	423 15	675 00	4,142 06	971 45
	County Court Clerk	"	1,470 85	.....	.....	1,288 10
	SurrogateRegistrar	"	1,573 06	.....	.....	1,566 86
PRESCOTT & RUSSELL: L'Original	Sheriff	Albert Hagar	1,336 16	.....	1,336 16	877 97
	Surrogate Judge	Judge Constantineau.	703 25	.....	703 25	703 25
	Local Master	"	.....	.....	.....	.....
	Crown Attorney	John Maxwell	308 25	.....	986 93	247 06
	Clerk of the Peace.	"	678 68	.....	.....	384 28
	Local Registrar	Joseph Bélanger	86 90	675 00	2,691 66	734 70
	County Court Clerk	"	323 75	.....	.....	285 65
	SurrogateRegistrar	"	1,516 01	.....	.....	1,367 76
PRINCE EDWARD: Picton	Sheriff	†James Gibson	1,255 74	.....	1,235 74	1,152 61
	Surrogate Judge	Judge Morrison.	547 50	.....	666 10	547 50
	Local Master	"	118 60	.....	.....	109 00
	Crown Attorney	Richard H. Hubbs	60 66	.....	599 33	53 66
	Clerk of the Peace.	"	538 67	.....	.....	349 34
	Local Registrar	Nehemiah Gilbert	175 20	600 00	2,399 22	775 20
	County Court Clerk	"	409 15	.....	.....	409 15
	SurrogateRegistrar	"	1,214 87	.....	.....	1,214 87
RAINY RIVER: Fort Frances	Sheriff	W. A. Baker	1,757 87	750 00	2,507 87	1,991 07
	Surrogate Judge	¶JudgeMcLennan	.....	*500 00	510 30	500 00
	Local Master	"	10 30	.....	.....	10 30
	Crown Attorney	‡N. L. Croome	262 60	250 00	766 65	456 80
	Clerk of the Peace.	"	254 05	.....	.....	152 65
	Local Registrar	Wm. H. Elliott	36 00	450 00	1,253 87	486 00
	District Court Clerk	"	503 00	.....	.....	503 00
	SurrogateRegistrar	"	264 87	.....	.....	264 87
RENFREW: Pembroke	Sheriff	Alex. Morris	2,578 22	.....	2,578 22	2,351 43
	Surrogate Judge	§Judge Fisher	983 00	.....	1,030 10	983 00
	Local Master	"	47 10	.....	.....	31 80
	Crown Attorney	J. H. Burritt,K.C.	202 57	.....	955 10	159 23
	Clerk of the Peace.	"	752 53	.....	.....	504 96
	Local Registrar	H. W. Perrett	68 34	600 00	2,328 21	668 34
	County Court Clerk	"	530 87	.....	.....	530 87
	SurrogateRegistrar	"	1,129 00	.....	.....	1,129 00

† D. J. Barker appointed by O.-in-C., 29th December, 1916, from 1st January, 1917. * By R.S.O. Cap. 58, Sec. 17. ‡ Appointed by O.-in-C. Oct. 5th, 1916. § Judge McNamara appointed Surrogate Judge by O.-in-C., 28th December, 1916, ¶Appointed Surrogate Judge, O.-in-C., 27th May, 1916.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O. Cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively			County or District.
						From Province,	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
683 84	2,318 32	1,023 97	1,294 35	.....	1,294 35	633 10	609 88	2,226 71	Perth
.....	1,723 00	.....	1,723 00	.....	1,723 00	873 00	.....	.....	
.....	.....	.....	.....	.....	.....	850 00	.....	.....	
85 00	2,074 35	343 00	1,731 35	.....	1,731 35	368 90	.....	107 00	
622 35	.....	.....	.....	.....	.....	101 70	1,356 56	93 43	
45 90	4,888 03	1,048 15	3,839 88	319 94	3,519 94	675 00	.....	292 10	
398 54	.....	.....	.....	.....	.....	.....	.....	1,068 25	
91 30	.....	.....	.....	.....	.....	.....	.....	2,701 01	
404 45	2,335 20	876 97	1,458 23	.....	1,458 23	1,088 68	622 97	741 01	Peterborough
.....	1,629 50	.....	1,629 50	.....	1,629 50	.....	.....	1,000 00	
463 00	.....	.....	.....	.....	.....	.....	.....	955 00	
376 50	2,535 21	566 51	1,968 70	.....	1,968 70	628 90	90 00	199 20	
649 89	.....	.....	.....	.....	.....	150 35	1,125 09	115 75	
117 70	4,198 73	567 25	3,631 48	215 74	3,415 74	675 00	.....	423 15	
116 70	.....	.....	.....	.....	.....	.....	.....	1,470 85	
137 92	.....	.....	.....	.....	.....	.....	.....	1,573 06	
441 85	1,319 82	917 69	402 13	.....	402 13	441 80	407 31	487 05	Prescott and Russell.
.....	716 20	.....	716 20	.....	716 20	.....	.....	703 28	
13 20	.....	.....	.....	.....	.....	.....	.....	.....	
76 15	752 34	79 00	673 34	.....	673 34	192 84	40 41	75 00	
44 25	.....	.....	.....	.....	.....	44 90	558 28	55 50	
2 30	2,499 26	525 20	1,974 06	.....	1,974 06	675 00	.....	86 90	
6 35	.....	.....	.....	.....	.....	.....	.....	323 75	
102 50	.....	.....	.....	.....	.....	.....	.....	1,516 01	
136 52	1,289 13	910 26	378 87	.....	378 87	534 00	508 49	213 25	Prince Edward.
.....	664 40	.....	664 40	.....	664 40	.....	.....	547 50	
7 90	.....	.....	.....	.....	.....	.....	.....	118 60	
3 32	620 67	250 00	370 67	.....	370 67	54 66	1 00	5 00	
214 35	.....	.....	.....	.....	.....	18 07	499 23	21 37	
.....	2,399 22	73 70	2,325 52	.....	2,325 52	600 00	.....	175 20	
.....	.....	.....	.....	.....	.....	.....	.....	409 15	
.....	.....	.....	.....	.....	.....	.....	.....	1,214 87	
425 72	2,416 79	773 12	1,643 67	.....	1,643 67	1,769 38	.....	738 49	Rainy River
.....	510 30	.....	510 30	.....	510 30	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	10 30	
481 86	1,196 01	12 00	1,184 01	.....	1,184 01	512 60	.....	.....	
104 70	.....	.....	.....	.....	.....	254 05	.....	.....	
.....	1,253 87	449 00	804 87	.....	804 87	450 00	.....	36 00	
.....	.....	.....	.....	.....	.....	.....	.....	503 00	
.....	.....	.....	.....	.....	.....	.....	.....	264 87	
388 16	2,739 59	1,336 74	1,402 85	.....	1,402 85	814 50	985 75	777 97	Renfrew.
.....	1,014 80	.....	1,014 80	.....	1,014 80	.....	.....	983 00	
.....	.....	.....	.....	.....	.....	.....	.....	47 10	
17 12	938 44	266 00	672 44	.....	672 44	202 57	.....	.....	
257 13	.....	.....	.....	.....	.....	27 70	658 63	66 20	
.....	2,328 34	161 00	2,167 21	.....	2,167 21	600 00	.....	68 34	
.....	.....	.....	.....	.....	.....	.....	.....	530 87	
.....	.....	.....	.....	.....	.....	.....	.....	1,129 00	

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
SIMCOE:						
Barrie....	Sheriff	W. McL. Harvey	2,685 00	.....	2,685 00	2,343 77
	Surrogate Judge...	Judge Vance ...	commuted	1,000 00	.....	1,000 00
	Local Master.....	J. R. Cotter.....	125 55	.....	2,409 98	125 55
	Crown Attorney...	"	687 59	.....	.....	555 54
	Clerk of the Peace.	"	1,596 84	.....	.....	1,006 91
	Local Registrar...	*John McCosh...	205 43	750 00	2,053 66	955 43
	County Court Clerk	"	1,098 23	.....	.....	1,098 23
	Surrogate Regist'r.	E. A. Little.....	3,793 80	.....	3,793 80	3,793 80
STORMONT, DUNDAS AND GLENGARRY: Cornwall .	Sheriff	W. R. Mack.....	2,490 95	.....	2,490 95	2,072 69
	Surrogate Judge...	Judge O'Reilly..	1,000 00	.....	1,440 00	1,000 00
	Local Master.....	"	commuted	440 00	.....	440 00
	Crown Attorney...	†James Dingwall	330 76	.....	1,064 91	125 84
	Clerk of the Peace.	"	734 15	.....	.....	514 05
	Local Registrar...	J. A. McDougald	55 40	750 00	4,597 65	805 40
	County Court Clerk	"	784 15	.....	.....	784 15
	Surrogate Regist'r.	"	3,008 10	.....	.....	3,008 10
SUDBURY: Sudbury..	Sheriff	Alex. Irving	4,198 92	950 00	5,148 92	4,587 99
	Surrogate Judge...	Judge Kehoe	.....	§ 500 00	595 70	500 00
	Local Master	"	95 70	.....	.....	87 20
	Crown Attorney...	‡G. M. Miller ...	3,527 45	250 00	4,332 34	3,253 35
	Clerk of the Peace.	"	554 89	.....	.....	347 84
	Local Registrar...	J. D. Shipley....	226 10	600 00	2,572 25	826 10
	Dist. Court Clerk..	"	1,540 75	.....	.....	1,540 75
	Surrogate Regist'r.	"	205 40	.....	.....	205 40
TEMISKAMING: Haileybury .	Sheriff	George Caldbick.	4,721 82	1,000 00	5,721 82	5,281 23
	Surrogate Judge...	Judge Hartman.	.....	§ 500 00	564 30	500 00
	Local Master.....	"	64 30	.....	.....	42 10
	Crown Attorney...	F. L. Smiley....	486 15	.....	.....	379 16
	Clerk of the Peace.	"	417 51	250 00	1,153 66	585 01
	Local Registrar ...	T. J. Meagher...	625 45	150 00	3,585 37	775 45
	District Court Cl'rk	"	2,040 42	450 00	.....	2,490 42
	Surrogate Registrar	"	319 50	.....	.....	319 50
THUNDER BAY: Port Arthur . ..	Sheriff	A. W. Thompson.	5,843 43	1,000 00	6,843 43	5,863 81
	Surrogate Judge...	Judge O'Leary ..	.....	§ 500 00	639 90	500 00
	Local Master.....	"	139 90	.....	.....	75 90
	Crown Attorney...	W.F.Langworthy.	812 45	250 00	1,331 35	943 35
	Clerk of the Peace.	" K.C.	268 90	.....	.....	99 90
	Local Registrar...	T. S. T. Smellie.	602 76	600 00	3,278 54	1,202 76
	Dist. Court Clerk..	"	1,498 60	.....	.....	1,498 60
	Surrogate Regist'r.	"	577 18	.....	.....	577 18
VICTORIA: Lindsay .	Sheriff	A. E. Vrooman..	1,196 90	.....	1,196 90	790 23
	Surrogate Judge...	Judge McMillan.	832 30	.....	840 70	832 30
	Local Masters ...	"	8 40	.....	.....	8 40
		Judge Swayze ...	16 00	.....	.....	16 00
	Crown Attorney ...	T. H. Stinson....	263 00	.....	974 86	158 00
	Clerk of the Peace.	"	711 86	.....	.....	351 88
	Local Registrar...	T. H. Sootheran.	12 00	675 00	2,504 45	687 00
	County Court Clerk	"	420 70	.....	.....	420 70
	Surrogate Regist'r,	"	1,396 75	.....	.....	1,396 75

* John Mackay appointed by O.-in-C., 22nd Sept., 1916. † John G. Harkness appointed by O.-in-C. 21st August, 1916. ‡ Pro tem by O.-in-C. 28th Oct., 1914. § By R.S.O., Cap. 58, Sec. 17.
‖ $200 of which is salary as District Treasurer.

Officers throughout the Province of Ontario, etc.—Continued.

Total received for past year's services.	Total receipts by officers from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O. cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
514 71	2,858 48	1,914 41	944 07	.....	944 07	846 05	916 57	922 38	Simcoe.
.....	1,000 00	.....	1,000 00	.....	1,000 00	1,000 00	.....	.....	
.....	2,560 24	390 51	2,169 73	4 41	2,165 32	.....	.....	125 55	
275 70	.....	.....	.....	.....	.....	687 59	.....	.....	
596 54	.....	.....	.....	.....	.....	216 43	1,377 91	2 50	
.....	2,053 66	200 00	1,853 66	.....	1,853 66	750 00	.....	205 43	
.....	.....	.....	.....	.....	.....	.....	.....	1,098 23	
.....	3,793 80	410 00	3,383 80	126 76	3,257 04	.....	.....	3,793 80	
494 44	2,567 13	966 43	1,600 70	.....	1,600 70	630 69	750 46	1,109 80	Stormont,
.....	1,440 00	.....	1,440 00	.....	1,440 00	.....	.....	1,000 00	Dundas
.....	.....	.....	.....	.....	.....	440 00	.....	.....	and Glen-
99 98	944 04	499 47	447 57	.....	447 57	250 67	8 37	71 72	garry.
204 17	.....	.....	.....	.....	.....	100 87	513 42	119 86	
.....	4,597 65	1,587 65	3,010 00	52 00	2,958 00	750 00	.....	55 40	
.....	.....	.....	.....	.....	.....	.....	.....	784 15	
.....	.....	.....	.....	.....	.....	.....	.....	3,008 10	
870 56	5,458 55	2,095 55	3,363 00	.....	3,363 00	3,675 69	.....	1,473 23	Sudbury.
.....	587 30	.....	587 30	.....	587 30	500 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	95 70	
817 70	4,584 69	754 20	3,830 49	.....	3,830 49	3,278 60	.....	498 85	
165 80	.....	.....	.....	.....	.....	490 99	.....	63 90	
.....	2,572 25	252 00	2,320 25	.....	2,320 25	600 00	.....	226 10	
.....	.....	.....	.....	.....	.....	.....	.....	1,540 75	
.....	.....	.....	.....	.....	.....	.....	.....	205 40	
1,150 79	6,432 02	2,039 29	4,392 73	.....	4,392 73	2,086 52	.....	3,635 30	Temiskam-
.....	542 10	.....	542 10	.....	542 10	500 00	.....	.....	ing.
.....	.....	.....	.....	.....	.....	.....	.....	64 30	
142 80	1,196 47	695 00	501 47	.....	501 47	486 15	.....	.....	
89 50	.....	.....	.....	.....	.....	667 51	.....	125 21	
.....	3,585 37	615 04	2,970 33	47 04	2,923 29	150 00	.....	625 45	
.....	.....	.....	.....	.....	.....	450 00	.....	2,040 42	
.....	.....	.....	.....	.....	.....	.....	.....	319 50	
892 34	6,756 15	2,459 18	4,296 97	.....	4,296 97	3,875 64	.....	2,967 79	Thunder
.....	575 90	5 00	570 90	.....	570 90	500 00	.....	.....	Bay.
.....	.....	.....	.....	.....	.....	.....	.....	139 90	
290 00	1,519 00	108 00	1,411 00	.....	1,411 00	1,062 45	.....	.....	
185 75	.....	.....	.....	.....	.....	268 90	.....	.....	
.....	3,278 54	462 30	2,816 24	31 63	2,784 61	600 00	.....	602 76	
.....	.....	.....	.....	.....	.....	.....	.....	1,498 60	
.....	.....	.....	.....	.....	.....	.....	.....	577 18	
325 56	1,115 79	437 02	678 77	.....	678 77	501 58	470 36	224 96	Victoria.
.....	840 70	.....	840 70	.....	840 70	.....	.....	832 30	
.....	.....	.....	.....	.....	.....	.....	.....	8 40	
.....	16 00	.....	16 00	.....	16 00	.....	.....	16 00	
61 00	802 84	308 00	494 84	.....	494 84	263 00	.....	.....	
231 96	.....	.....	.....	.....	.....	61 50	573 36	77 00	
.....	2,504 45	200 00	2,304 45	.....	2,304 45	675 00	.....	12 00	
.....	.....	.....	.....	.....	.....	.....	.....	420 70	
.....	.....	.....	.....	.....	.....	.....	.....	1,396 75	

APPENDIX F.—Return of fees and emoluments of the Judicial

County or District and Town.	Office.	Officer.	Amount earned.	Salary paid by Province.	Total earnings and salary in all offices.	Total received for present year's services.
			$ c.	$ c.	$ c.	$ c.
WATERLOO: Kitchener.	Sheriff	H. G. Lackner	2,499 62		2,499 62	2,045 08
	Surrogate Judge	Judge Reade	1,000 00		1,000 00	1,000 00
	Local Master	J. J. A. Weir	167 10		167 10	47 50
	Crown Attorney .**	W.H.Bowlby,K.C.	378 70		1,543 35	275 70
	Clerk of the Peace.	"	1,164 65			903 95
	Local Registrar	E. J. Beaumont	96 53	675 00	1,717 39	756 35
	County Court Clerk	"	945 86			855 26
	Surrogate Regist'r.	John M. Scully.	2,995 14		2,995 14	2,644 43
WELLAND: Welland..	Sheriff	James Smith	2,787 08		2,787 08	2,318 71
	Surrogate Judge	Judge Livingston	1,000 00		1,087 30	1,000 00
	Local Master	"	87 30			87 30
	Crown Attorney	T. D. Cowper	1,519 44		3,951 28	1,162 44
	Clerk of the Peace.	"	2,431 84			1,614 88
	Local Registrar	J. E. Cohoe	276 30	800 00	3,777 18	1,076 30
	County Court Clerk	"	825 55			825 55
WELLINGTON:	Surrogate Regist'r.	"	1,875 33			1,875 33
Guelph	Sheriff	A. S. Allan	2,760 45		2,760 45	2,031 92
	Surrogate Judge	Judge Chadwick	Commuted	1,000 00	1,000 00	1,000 00
	Local Master	‡W.H.Kingston,	"			
	Local Registrar	" K.C.	"	*1,665 00	1,698 95	1,665 00
	Local Master	"	24 25			24 25
	Local Registrar	"	9 70			9 70
	Crown Attorney	A. H. Macdonald,	758 43		2,742 83	606 93
	Clerk of the Peace	"	1,984 40			1,810 74
WENTWORTH:	County Court Clerk	‡Wm. Carroll	556 95		556 95	536 80
	Surrogate Regist'r.	"	2,803 09		2,803 09	2,603 19
Hamilton	Sheriff	J. T. Middleton	7,150 10		7,150 10	6,224 61
	Surrogate Judge	Judge Snider	1,500 00		1,500 00	
	"	Judge Monck	1,000 00		1,399 60	1,000 00
	Local Master	"	399 60			
	Deputy Registrar	T.H.A. Begue, K.C.	12 00	173 60	185 60	185 60
	Crown Attorney	S. F. Washington,	4,929 07		7,000 91	3,647 27
	Clerk of the Peace.	" K.C.	2,071 84			1,416 50
	Dep.Cl'koftheCr'wn	T.H.A. Begue, K.C.	70 32	347 21	5,734 34	417 53
	County Court Clerk	"	1,980 90			1,980 90
	Surrogate Regist'r.	"	3,335 91			3,335 91
	Dep.Cl'koftheCr'wn	S. F.Washington,		55 99	974 35	55 99
	County Court Clerk	† " K.C.	393 85			393 85
	Surrogate Registr'r	"	524 51			524 51
	Local Registra	§H. C. Gwyn, K.C.	64 98	145 14	1,767 51	52 98
	County Court Clerk	"	689 45			689 45
YORK:	Surrogate Regist'r.	"	887 94			887 94
Toronto	Sheriff	Alex. McCowan	11,983 89		11,983 89	9,704 76
	Surrogate Judges	Judge Winchester	2,600 00		2,600 00	
		Judge Morgan	1,600 00		1,600 00	
		Judge Morson	1,600 00		1,600 00	
		Judge Denton	1,600 00		1,600 00	
		JudgeCoatsworth	1,600 00		1,600 00	
	Crown Attorney	R. H. Greer	6,574 32		6,574 32	4,427 22
	Clerk of the Peace	H. E. Irwin, K.C.	6,404 89		6,404 89	4,804 91
	County Court Clerk	John Shaw	13,445 20		13,445 20	13,445 20
	SurrogateRegist'r.	A. F.Wallis	24,026 09		24,026 09	24,026 09
TORONTO:	Sheriff	Fredk' Mowat	27,744 89		27,744 89	24,430 55
	Crown Attorney	J.W.S.Corley,K.C.	Commuted	6,500 00	7,060 54	7,060 54

*Commutation ceased 31st October, on the appointment of Mr. Kingston to the offices of Local
‡W. H. Kingston succeeded Mr. Carroll as County Court Clerk and Surrogate Registrar,
Clerk and Surrogate Registrar, by O.-in-C., 19th Sept., 1916. † Acting 10th Sept. to 23rd

Officers throughout the Province of Ontario, etc.--Concluded.

Total received for past year's services.	Total receipts by officer from all his offices.	Total disbursements.	Net receipts.	Amount paid to Province under R.S.O. cap. 17.	Net income.	Earnings of each officer payable by the Province, the County, and the General Public, respectively.			County or District.
						From Province.	From County.	From General Public.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
692 43	2,737 51	1,175 42	1,562 09	.....	1,562 09	696 49	435 51	1,367 62	Waterloo.
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
31 00	78 50	.....	78 50	.....	78 56	.....	.....	167 16	
180 40	1,660 05	300 00	1,360 05	.....	1,360 05	303 70	.....	75 00	
300 00	.....	.....	.....	.....	.....	86 20	1,000 00	78 45	
.....	1,791 06	416 00	1,375 16	.....	1,375 16	675 00	.....	96 53	
179 55	.....	.....	.....	.....	.....	.....	.....	945 86	
333 99	2,978 42	677 10	2,301 32	.....	2,301 32	.....	.....	2,995 14	
608 52	2,927 23	1,158 75	1,768 48	.....	1,768 48	1,065 72	718 32	1,003 04	Welland.
.....	1,087 30	.....	1,087 30	.....	1,087 30	.....	.....	1,000 00	
.....	.....	.....	.....	.....	.....	.....	.....	87 30	
391 00	4,042 76	984 00	3,058 76	167 62	2,891 14	962 00	495 06	62 44	
874 44	.....	.....	.....	.....	.....	2,155 34	276 50	.....	
.....	3,777 18	1,191 31	2,585 87	8 58	2,577 29	800 00	.....	276 30	
.....	.....	.....	.....	.....	.....	.....	.....	825 55	
.....	.....	.....	.....	.....	.....	.....	.....	1,875 33	
498 85	2,530 77	1,218 03	1,312 74	.....	1,312 74	1,173 50	703 93	883 02	Wellington.
.....	1,000 00	.....	1,000 00	.....	1,000 00	1,000 00	.....	.....	
.....	1,698 95	69 40	1,798 95	.....	1,698 95	1,665 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	24 25	
.....	.....	.....	.....	.....	.....	.....	.....	9 70	
182 90	2,644 57	403 60	2,240 97	24 09	2,216 88	710 05	5 00	43 38	
44 00	.....	.....	.....	.....	.....	114 25	1,700 00	170 15	
52 35	589 15	9 90	579 25	.....	.....	.....	.....	556 95	
197 55	2,800 74	427 05	2,373 69	45 2	2,907 65	.....	.....	2,803 09	Wentworth
1,278 91	7,503 52	2,795 38	4,708 14	.....	4,708 14	3,201 26	917 33	3,031 57	
.....	1,500 00	.....	1,500 00	.....	1,500 00	.....	.....	1,500 00	
.....	1,000 00	.....	1,000 00	.....	1,000 00	.....	.....	1,000 00	
.....	.....	.....	.....	.....	.....	.....	.....	399 60	
41 66	227 26	86 80	140 46	.....	140 46	173 60	.....	12 00	
1,545 62	7,404 38	1,599 25	5,805 13	1,452 56	4,352 57	4,645 82	.....	283 25	
794 99	.....	.....	.....	.....	.....	617 25	1,444 84	9 75	
83 33	5,817 67	1,723 59	4,094 08	1,189 33	2,904 75	347 21	.....	70 32	
.....	.....	.....	.....	.....	.....	.....	.....	1,980 90	
.....	.....	.....	.....	.....	.....	.....	.....	3,335 91	
.....	974 35	250 97	723 38	226 93	496 45	55 99	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	393 85	
.....	.....	.....	.....	.....	.....	.....	.....	524 51	
.....	1,630 37	450 05	1,180 32	381 74	798 58	145 14	.....	64 98	
.....	.....	.....	.....	.....	.....	.....	.....	689 45	
.....	.....	.....	.....	.....	.....	.....	.....	887 94	
2,171 64	11,876 40	6,056 15	5,820 25	.....	5,820 25	7,460 61	1,220 35	3,202 93	York.
.....	.....	.....	2,600 00	.....	2,600 00	.....	.....	2,600 00	
.....	.....	.....	1,600 00	.....	1,600 00	.....	.....	1,600 00	
.....	.....	.....	1,600 00	.....	1,600 00	.....	.....	1,600 00	
.....	.....	.....	1,600 00	.....	1,600 00	.....	.....	1,600 00	
.....	.....	.....	1,600 00	.....	1,600 00	.....	.....	1,600 00	
1,964 30	6,391 52	1,601 66	4,789 86	944 93	3,844 93	5,922 50	651 82	.....	
2,125 11	6,930 02	3,590 67	3,339 35	251 80	3,087 55	2,493 25	3,680 64	231 00	
.....	13,445 20	5,769 80	7,675 40	3,307 86	4,367 54	.....	.....	13,445 20	
.....	24,026 29	4,823 66	19,202 43	13,682 19	5,520 24	.....	.....	24,026 09	
3,999 03	28,429 58	16,326 82	12,102 76	5,042 49	7,030 27	4,739 74	* 446 60	22,115 55	Toronto.
.....	.....	.....	7,060 54	.....	7,060 54	6,500 00	.....	560 54	

Registrar, Local Master, County Court Clerk and Surrogate registrar without salary. O.-in-C. 31st Oct., 1916. § H. C. Gwyn, K.C., appointed Local Registrar, County Court Oct. ‖ $560.64 commission on fines. **D. S. Bowlby, by O.-in-C., 12th March, 1917. * Payable by City $443.00.

APPENDIX G.—Table showing the business of the High Court Division of the Supreme Court of Ontario, transacted in Toronto during 1916, compiled from statements furnished by the officers at Osgoode Hall.

CENTRAL OFFICE.

CLERK OF RECORDS AND WRITS:—

Writs of summons issued, of which 87 were concurrent writs	2,507
Actions entered in Procedure Book commenced by writs issued during the year 1916	867
" " " " " previous year	12
" " " otherwise than by writ	187
Præcipe Orders issued	119
Records passed	404
Writs of Execution Fi. Fa. issued	767
" renewed, and Alias and Pluries Writs issued	142
Special writs (Habeas Corpus, etc.) issued	18

CLERK IN CHAMBER:—

Chamber Orders and Fiats	5,035
Chamber fylings	7,269

OFFICE OF THE REGISTRARS:—

Actions entered for trial with Jury	60
" " without a Jury	319
" tried with a Jury	50
" " without a Jury	157
Amount of Jury fees paid City Treasurer $174 00	

JUDGMENT CLERK:—

Court orders	735
Deeds Poll entered and filed	15
Judgments entered without trial	174
" " after trial	179
" of the Master in Chambers	85
" under Con. Rule 600	22
" " " " 467 by default	634
" " " " 35 "	303
" in mechanics' lien actions	35
" of official referees	839
" entered in respect of Writs issued in the year 1910	49
" " " " " 1911	1
" " " " " 1912	2
" " " " " 1913	3
" " " " " 1914	36
" " " " " 1915	680
" " " " " 1916	1,500
Total judgments entered	2,271

Approximate amount recovered on Judgments (exclusive of costs)	$9,625.907 06
Amount of Taxed costs (including disbursements) on judgements of all kinds	$71,594 50

OFFICE OF THE INSPECTOR AND REFEREE OF TITLES.

Petitions received under The Quieting Titles Act	15
Certificates of Title granted under The Quieting Titles Act	11

ACCOUNTANT'S OFFICE.

Amount of moneys paid into Court	$2,296,399 40
" " " out of Court	2,039,055 78
Number of directions issued for payments of moneys into Court	1,841
" cheques issued	6,361
" certificates issued	142
" new accounts opened	1,021

APPENDIX G.—Table showing the business of the High Court Division of the Supreme Court of Ontario, transacted in Toronto, etc.—Continued.

OFFICE OF THE MASTER IN ORDINARY.

References before Master and Assistant Master.	Master.	Assistant Master.
Trustees accounts	–	1
Partition or sale	.....	.....
Foreclosure	384	.....
Administration	3	.....
Title	1	.....
Partnership accounts	.....	.....
Alimony	3	.....
Winding up	10	.....
Lunacy	3	.....
Executors' accounts	.....	.....
Mechanics' liens	.....	273
Heirs	1	.....
Sale	.....	.....
Damages	2	1
Redemption or sale	3	.....
Receivership	2	.....
Settling conveyances	.....	.....
Specific performance	.....	.....
Accounts	10	.....
Trial	3	1
	425	276

Orders issued by the Master in Winding-up Matters. 81.

REFERENCES BEFORE OFFICIAL REFEREES.

—	Master in Chambers.	Mr. Roche.	Mr. McAndrew	Total
Sale	.....	.....	.....	.....
Specific Performance	.....	.....	.....	.....
Trial or assessment	6	.....	2	8
Trustees and Executors' accounts	.....	.....	.....	.....
Winding up	9	.....	.....	9
Lunacy	.....	.....	.....	.....
Accounts	.....	.....	.....	.....
Mechanics' liens	.....	2	.....	2
Title	.....	.....	.....	.....
Partition or sale	.....	.....	.....	.....
Administration	.....	.....	.....	.....
Receivership	.....	.....	1	1
Foreclosure	.....	.....	.....	.....
Under Arbitration Act	.....	.....	.....	.....
Vendor and Purchaser	.....	.....	.....	.....
Partnership accounts	.....	.....	1	1
	15	2	4	21

FEES PAID IN LAW STAMPS.

Clerk Records and Writs		$10,388 55
Judgment Clerk		6,327 30
Registrars' office { For Fee Fund	$887 30	2,015 30
Registrars' office { For Shorthand Reporters' Fund	1,128 00	
Clerk in Chambers		4,973 70
Office of the Inspector and Referee (Quieting Titles)		168 60
Accountant's office		1,017 30
Master in Chambers as Official Referee		232 30
Master in Ordinary		4,974 80
Assistant Master-in-Ordinary		382 00
Registrar of the Court of Appeal		1,690 30

APPENDIX H.—Table showing the number of actions tried or otherwise disposed of by the Judges of the High Court Division and of the Divisional Courts of the Appellate Division of the Supreme Court of Ontario, and the disposition thereof during the year ending Dec. 31st, 1916.

Trial Judges.

Actions tried or otherwise disposed of by the Judges of the High Court Division of the Supreme Court of Ontario.

County or District.	With a Jury.	Without a Jury.	Total.
Algoma	2	2	4
Brant	2	12	14
Bruce	1	6	7
Carleton	8	32	40
Dufferin	1	.....	1
Elgin	4	2	6
Essex	7	33	40
Frontenac	.....	12	12
Grey	3	9	12
Haldimand	.....	2	2
Halton	1	.....	1
Hastings	9	7	16
Huron	2	8	10
Kenora	.....	6	6
Kent	1	13	14
Lambton	1	7	8
Lanark	1	1	2
Leeds and Grenville	.....	7	7
Lennox and Addington	.....	1	1
Lincoln	2	15	17
Manitoulin	.....	.....	0
Middlesex	2	15	17
Muskoka	1	3	4
Nipissing	1	8	9
Norfolk	.....	3	3
Northumberland and Durham	1	4	5
Ontario	.....	2	2
Oxford	.....	5	5
Parry Sound	.....	2	2
Peel	.....	.....	0
Perth	2	14	16
Peterborough	.....	6	6
Prescott and Russell	1	1	2
Prince Edward	.....	.....	0
Rainy River	2	9	11
Renfrew	2	1	3
Simcoe	.....	5	5
Stormont, Dundas and Glengarry	.....	9	9
Sudbury	1	5	6
Temiskaming	3	5	8
Thunder Bay	4	4	8
Victoria	1	.....	1
Waterloo	1	9	10
Welland	3	7	10
Wellington	2	4	6
Wentworth	10	33	43
York	50	157	207
Totals	132	486	618

APPENDIX H.—Table showing the number of actions tried, etc.—Continued.

Judges in Chambers.	Allowed or varied.	Dismissed.	Standing for Judgment.	Total.
Toronto:—				
Appeals from the Masters in Chambers	11	21	.....	32
" Acting Masters in Chambers	.....	.....	.....	.....
" Local Masters and other officers acting in Chambers	14	20	.....	34
Appeals from Official Referees	.....	.....	.....	.....
" Local Taxing Officers	.....	.....	.....	.....
" Taxing Officers at Toronto	.....	.....	.....	.....
Motions, other than appeals	.....	.....	.....	1,073
Ottawa:—				
Appeals from Local Masters and other officers acting in Chambers	.....	.....	.....	.....
Motions, other than appeals	24	4	1	29
London;—				
Appeals from Local Masters or other officers acting in Chambers	.....	.....	.....	.....
Motions, other than appeals	44	6	3	53
Totals	93	51	4	1,221

Weekly Courts.	Allowed.	Dismissed.	Standing for Judgment or Abandoned.	Total.
Toronto:—				
Appeals from reports and orders of Local Masters and Official Referees	12	12	.....	24
Appeals from awards and motions to set aside awards	2	1	.....	3
Motions, other than appeals	613	49	9	671
Number struck off the list, no one appearing	.....	.....	.....	20
" of motions enlarged	.....	.....	.....	282
Ottawa:—				
Appeals from Local Judges	.....	.....	.....	.....
Appeals from reports of Local Masters and Official Referees	1	2	.....	3
Motions, other than appeals	27	3	1	31
London:—				
Motions, other than appeals	32	3	2	37
Appeals from reports of Local Masters and Official Referees	.....	1	.....	1
Totals	687	71	12	1,052

Master in Chambers:—	
Motions in respect of pleadings, for particulars, for discovery and for commissions to take evidence	405
Motions in respect of venue, to set aside jury notices and notices of trial and proceedings under quo warranto	79
Motions for judgments and orders	520
Motions setting aside judgments or orders, staying trials, and dismissing actions	573
Miscellaneous motions	708
Ex parte motions	551
Motions taken by the Master-in-Ordinary and Official Referees acting for the Master in Chambers	307
Total	3,143

APPENDIX H.—Table showing number of actions tried, etc.—Continued.

Appellate Division (Divisional Courts Nos. 1 & 2).	Allow'd.	Dismissed.	Varied.	Standing for		Withdrawn.	Total.
				Argument. *	Judgment.		
Appeals from Single or Trial Judges ..	56	126	34	2	23	38	279
Appeals from Board of County Judges.							
Appeals from Arbitrators	1	7	2				10
Cases stated by Arbitrators							
Appeals from Official Referees	4	3	1				8
Appeals from the Ontario Railway and Municipal Board							
Election Recounts							
Habeas Corpus Appeals							
Reserved and stated cases under criminal code	4	11					15
Appeals from County, District and Division Courts	58	79	12	1	4	5	159
Appeals from Surrogate Courts	1	1					2
Appeals from Mining Commissioner							
" " Local Masters	1	5	1				7
Submitted under Con. Questions Act							
Referred under Orders in Council							
Questions in Civil Matters referred by Judges	1	3					4
Appeals from Council of College of Physicians and Surgeons						1	1
Totals	126	235	50	3	27	44	485

Motions to full Court	68
Judgments and Certificates thereof issued	320
Number of Cases (including motions) heard by Divisional Court No. 1	238
" " " " " " " No. 2	271
" " set down during 1916	472

* The cases not ready to be heard are not included.

APPENDIX "I."

TABLE showing the business in the office of the Surrogate Clerk, Osgoode Hall, Toronto, for the year ending December 31st, 1916.

Probate Certificates issued	5,832
Administration Certificates issued	2,928
Guardianship Certificates issued	65
Caveats fyled	102
Fees paid in Law Stamps	$4,656 70

APPENDIX J.—Table showing the Criminal business of the High Court Division of the Supreme Court of Ontario at its sittings throughout the Province during the year 1916.

County or District.	Bills. True.	Bills. No.	Nolle prosequi.	Indictments quashed.	Traversed to the Sessions.	Number of persons pleading guilty.	Number of persons tried. With a Jury.	Number of persons tried. Without a Jury.	Verdicts after trial. Guilty.	Verdicts after trial. Not guilty.	Verdicts after trial. Disagreed.	Verdicts after trial. Reserved.	Number of days of sittings.
Algoma	11	....	1	....	....	2	8	.....	2	5	1	....	9
Brant	1	....	....	....	1	....	1	.....	.....	1	....	....	2
Bruce	5	2	....	....	....	....	2	.....	2	.....	....	....	3
Carleton	18	....	1	....	....	3	17	.....	2	15	....	....	8
Dufferin	1	....	....	....	....	1	1	1	1	.....	....	....	5
Elgin	2	....	....	....	....	....	2	.....	2	.....	....	....	4
Essex	1	....	....	....	....	1	2	.....	2	.....	....	....	3
Frontenac	2	....	....	....	....	....	1	.....	1	.....	....	1	4
Grey	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Haldimand	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Halton	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Hastings	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Huron	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Kenora	2	....	....	....	....	....	2	.....	1	.....	1	....	7
Kent	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Lambton	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Lanark	1	....	....	....	....	....	1	.....	.....	1	....	....	1
Leeds and Grenville	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Lennox and Addington	1	....	....	....	....	....	1	.....	1	.....	....	....	1
Lincoln	1	....	....	....	....	....	1	.....	.....	1	....	....	2
Manitoulin	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Middlesex	5	....	....	....	....	....	5	.....	2	3	3	1	9
Muskoka	2	....	....	....	....	....	2	.....	.....	1	....	....	4
Nipissing	3	....	....	....	....	....	2	.....	1	1	....	....	2
Norfolk	1	1	....	....	....	....	1	.....	1	.....	....	....	5
Northumberland & D'm	3	1	....	....	....	....	1	.....	1	.....	....	....	5
Ontario	1	....	....	....	....	....	1	.....	.....	1	....	....	1
Oxford	1	....	....	....	....	1	.....	1	1	.....	....	....	2
Parry Sound	2	....	....	....	....	....	2	.....	1	1	....	....	3
Peel	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Perth	1	....	....	....	....	....	1	.....	.....	1	....	....	2
Peterborough	7	....	....	....	....	....	4	.....	2	6	....	1	8
Prescott and Russell	1	....	....	....	....	....	1	.....	1	.....	....	....	2
Prince Edward	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Rainy River	3	....	....	....	....	....	3	.....	1	2	....	....	3
Renfrew	2	....	....	....	....	1	2	.....	2	.....	....	....	2
Simcoe	....	....	....	....	....	....	.....	.....	.....	.....	....	....	.....
Stormont, D's and G'y.	2	....	....	....	....	1	1	1	2	.....	....	....	7
Sudbury	3	....	....	....	....	....	3	.....	.....	.....	....	....	5
Temiskaming	....	1	....	....	....	....	.....	.....	.....	.....	....	....	1
Thunder Bay	6	2	....	....	....	....	7	.....	1	3	....	....	6
Victoria	1	1	....	....	....	....	1	.....	1	.....	....	....	2
Waterloo	2	....	....	....	1	1	.....	.....	.....	.....	....	....	2
Welland	2	....	....	....	1	....	2	.....	1	1	....	....	6
Wellington	1	....	....	....	....	....	1	.....	1	.....	....	....	2
Wentworth	1	....	....	....	....	....	1	.....	1	.....	....	....	1
York	27	5	21	1	1	1	31	.....	18	13	....	....	81
Totals	123	13	23	1	4	12	111	3	52	50	5	3	209

APPENDIX K.—Table showing the business of the Courts of General Sessions of the Peace and of the District and County Court Judge's Criminal Courts of the Province for the year 1916.

County or District.	Bills in Sessions.		Cases C. C. J. C. C.	Number of Persons Pleading Guilty.		Number of Persons Tried.		Verdicts after Trial.					Persons Accused.				Days of Sittings.	
						With Jury.	Without Jury.	Guilty.		Not Guilty.		Disagreed.	Sessions.		C. C. J. C. C.			
	True.	No.		Sessions.	C. C. J. C. C.	Sessions.	C. C. J. C. C.	Sessions.	C. C. J C. C.	Sessions.	C. C. J. C. C.		Male.	Female.	Male	Female	Sessions.	C. C. J. C. C.
Algoma	10	.....	28	4	12	6	20	4	10	2	8	2	4	2	17	3	4	31
Brant	.....	.....	18	.....	5	.....	15	.....	7	.....	8	.....	.....	.....	15	.....	.....	11
Bruce	2	.....	11	.....	6	1	5	1	1	.....	4	.....	1	1	11	.....	7	11
Carleton	5	.....	25	.....	3	3	19	2	12	2	13	.....	4	.....	21	.....	7	53
Dufferin	.....	.....	3	.....	1	.....	3	.....	1	.....	1	.....	.....	.....	3	.....	2	4
Elgin	3	1	16	.....	1	3	15	1	4	2	11	.....	3	.....	12	3	3	27
Essex	.....	2	.....	.....	.....	.....	14	.....	8	.....	6	.....	.....	.....	12	2	5	16
Frontenac	1	.....	10	1	3	.....	10	1	7	.....	3	.....	1	.....	10	.....	3	8
Grey	1	1	8	.....	5	2	4	.....	1	2	3	.....	3	.....	9	.....	4	8
Haldimand	.....	.....	15	.....	8	.....	7	.....	6	1	.....	.....	.....	.....	14	1	4	14
Halton	1	.....	12	.....	7	1	12	.....	10	.....	2	1	1	.....	12	.....	2	10
Hastings	.....	.....	41	.....	6	.....	41	.....	17	.....	18	.....	.....	.....	38	3	1	61
Huron	1	.....	6	.....	3	1	6	.....	5	1	1	6	1	.....	6	.....	7	18
Kenora	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kent	1	.....	31	.....	7	1	31	.....	20	1	11	.....	1	....	31	.....	1	14
Lambton	.....	.....	13	.....	4	.....	9	.....	11	.....	2	.....	.....	.....	12	1	3	14
Lanark	.....	.....	17	.....	8	.....	13	.....	8	.....	5	.....	.....	.....	12	1	.....	11
Leeds and Grenville	2	.....	54	.....	26	2	28	2	11	.....	17	.....	2	.....	49	5	4	61
Lennox and Addington	.....	.....	5	.....	2	.....	5	.....	1	.....	2	.....	.....	.....	5	.....	4	7
Lincoln	5	.....	10	.....	2	3	8	3	7	.....	1	.....	5	.....	9	.....	9	15
Manitoulin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Middlesex	4	.....	21	.....	13	2	10	.....	8	2	2	.....	3	.....	23	.....	10	41

Muskoka	3		13		3	2	10	2	7		3		3		12	1	3	5
Nipissing	1	1	9		1	1	8		3	1	5		1	1	9		3	8
Norfolk	2	1	15	1	11	1	13	1	13				1		10	1	4	3
Northumberland and Durham	1	1	11		6	1	8		5	1	5		1		7	1	3	15
Ontario			11		3		8		6		2				11		3	12
Oxford	2		12		6	2	6	1	6			1	2		12		9	9
Parry Sound			19		8		17		5		2				18	1		15
Peel			3		5		5						1		4		2	3
Perth			9		5		4		1		3				10		3	14
Peterborough	5	2	11		1	4	9	1	6	3	3		5	1	9		9	9
*Prescott and Russell																		
Prince Edward			1				1			2	3				1			2
Rainy River	4		6	1	3	3	4	2	3	1	3	3	4		4		4	4
Renfrew					5		2				2				7			7
Simcoe	1		19		12		19		16		3				16	3	2	37
Stormont, Dundas and Glengarry	1		8		9								1		8	1	3	5
Sudbury			42		17		42		26		16	16	1		42		2	25
Temiskaming	1		12		3		10		8		4		1		9	1	2	8
Thunder Bay	1		14		4	1	14	1	9		5		1		14		4	28
Victoria							1		1						1			1
Waterloo			16		10		6		2		3	3	2		13	1	1	23
Welland	11	4	19	1	8	6	11	2	3	4	8	12	12	1	19		9	22
Wellington			22		20		1		1				21				2	17
Wentworth	2		117		44	1	130		32	1	54		2		121	9	10	46
York	121	16	406	21	146	26	323	19	192	9	128		141	17	392	75	96	132
Totals																		

*Returns from Crown Attorney Maxwell not received.

APPENDIX "L."

Officers Appointed During 1916.

Surrogate Judges.

John S. Campbell, of the City of St. Catharines, in the County of Lincoln, one of His Majesty's Counsel learned in the law, to be Judge of the Surrogate Court of the said County of Lincoln, pro tempore, in the room and stead of His Honour the late Judge Robert B. Carman, deceased.—*Gazette, March 11th.*

His Honour Gerard Holmes Hopkins, of the Town of Cayuga, Judge of the County of Haldimand, to be Judge of the Surrogate Court of the said County of Haldimand, in the room and stead of His Honour Judge Douglas, Esquire, deceased.—*Gazette, April 8th.*

His Honour Ward Stanworth, Judge of the County Court of the County of Kent, to be Judge of the Surrogate Court of the said County of Kent, in the room and stead of His Honour Archibald Bell, Esquire, retired.—*Gazette, April 15th.*

His Honour John Franklin Wills, Junior Judge of the County Court of the County of Hastings, to be Judge of the Surrogate Court of the said County of Hastings, in the room and stead of His Honour Judge Fralick, retired.—*Gazette, May 27th.*

His Honour John S. Campbell, Judge of the County Court of the County of Lincoln, to be Judge of the Surrogate Court of the said County of Lincoln.—*Gazette, May 27th.*

His Honour Allan McLennan, Judge of the District Court of the District of Rainy River, to be Judge of the Surrogate Court of the said District of Rainy River, in the room and stead of His Honour Judge Fitch, Esquire, removed.—*Gazette, June 10th.*

His Honour Lewis H. Dickson, Judge of the County of Huron, to be Judge of the Surrogate Court of the said County of Huron, in the room and stead of His Honour Judge Doyle, Esquire, retired.—*Gazette, June 24th.*

Crown Attorneys and Clerks of the Peace.

Walter S. Morphy, of the Town of Brampton, in the County of Peel, Esquire, Barrister-at-law, to be Crown Attorney and Clerk of the Peace in and for the said County of Peel, in the room and stead of W. H. McFadden, Esquire.—*Gazette, April 1st.*

Uriah Morley Wilson, of the Town of Napanee, in the County of Lennox and Addington, to be Crown Attorney and Clerk of the Peace in and for the said County of Lennox and Addington, in the room and stead of H. M. Deroche, Esquire, deceased.—*Gazette, April 8th.*

Frederick William Wilson, of the Town of Petrolia, in the County of Lambton, Esquire, Barrister-at-Law, to be Crown Attorney and Clerk of the Peace in and for the said County of Lambton, in the room and stead of J. P. Bucke, Esquire, deceased.—*Gazette, April 22nd.*

John G. Harkness, of the Town of Cornwall, in the County of Stormont, to be County Crown Attorney and Clerk of the Peace in and for the United Counties of Stormont, Dundas and Glengarry, in the room and stead of James Dingwall, Esquire, resigned.—*Gazette, October 21st and 28th.*

NORMAN L. CROOME, of the Town of Rainy River, in the District of Rainy River, Esquire, Barrister-at-Law, to be Crown Attorney and Clerk of the Peace in and for the said District of Rainy River.—*Gazette, November 25th.*

LOCAL REGISTRARS, ETC.

FREDERICK TASKER, of the Town of Parry Sound, in the District of Parry Sound, Esquire, to be Local Registrar of the Supreme Court, Clerk of the District Court and Registrar of the Surrogate Court in and for the said District of Parry Sound, in the room and stead of E. Jordan, Esquire, resigned.—*Gazette, July 29th.*

HERBERT CHARLES GWYN, of the Town of Dundas, in the County of Wentworth, to be Local Registrar of the Supreme Court of Ontario, Clerk of the County Court and Registrar of the Surrogate Court in and for the County of Wentworth, in the room and stead of T. H. A. Begue, Esquire, deceased.—*O. and C., 19th September; Gazette, October 7th.*

JOHN MACKAY, of the Village of Creemore, in the County of Simcoe, Esquire, to be Local Registrar of the Supreme Court of Ontario and Clerk of the County Court in and for the County of Simcoe, in the room and stead of John McCosh, Esquire, deceased.—*Gazette, October 21st.*

WILLIAM H. KINGSTON, of the City of Guelph, in the County of Wellington, Local Master and Local Registrar of the Supreme Court of Ontario in and for the County of Wellington, to be Clerk of the County Court and Surrogate Registrar in and for the said County of Wellington, in the room and stead of William Carroll, Esquire, deceased.—*Gazette, November 11th.*

ROBERT E. CLAPP, of Mildmay P.O., in the County of Bruce, Esquire, M.D., to be Local Registrar of the Supreme Court of Ontario, Clerk of the County Court, and Registrar of the Surrogate Court in and for the said County of Bruce, in the room and stead of M. Goetz, Esquire, deceased.—*Gazette, December 2nd.*

POLICE MAGISTRATES.

WILLIAM ROLAND CUMMINGS, of the Town of Eastview, in the County of Carleton, Esquire, to be Police Magistrate in and for the said Town of Eastview.—*Gazette, January 8th.*

HAROLD JAMIESON, of the Town of Almonte, in the County of Lanark, Esquire, Barrister-at-Law, to be Police Magistrate in and for the said Town of Almonte, in the room and stead of E. W. Smith, Esquire, deceased.—*Gazette, January 22nd.*

JAMES W. HUTCHINSON, of the Village of Port Rowan, in the County of Norfolk, to be Police Magistrate in and for the said Village of Port Rowan, in the room and stead of Thomas Gordon, Esquire, deceased.—*Gazette, January 22nd.*

JOHN MCGOWAN, of the Village of Elora, in the County of Wellington, Esquire, to be Police Magistrate in and for the said Village of Elora and for the Townships of Nichol and Pilkington, in the room and stead of Henry Wissler, resigned.—*Gazette, February 5th.*

JOHN STEVEN FRY, of the Town of Dundas, in the County of Wentworth, Esquire, to be Police Magistrate in and for the said Town of Dundas.—*Gazette, March 11th.*

ALFRED FIELDS HEYWORTH, of Hearst P.O., in the District of Algoma, Esquire, to be Police Magistrate in and for the Townships of Way, Kendall, Haulon and Casgrain, in the said District of Algoma.—*Gazette, April 1st.*

Walter J. Barr, of the Town of Burlington, in the County of Halton, Esquire, to be Police Magistrate in and for the said Town of Burlington.—*Gazette, May 20th.*

John B. Pinkerton, of Elgin, in the United Counties of Leeds and Grenville, Esquire, to be Police Magistrate in and for the Townships of South Crosby, Bastard and Rear of Leeds and Lansdowne.—*Gazette, May 27th.*

Thomas Kelley, of the Town of Petrolia, in the County of Lambton, Esquire, to be Police Magistrate in and for the said Town of Petrolia, in the room and stead of Frederick W. Wilson, resigned.—*Gazette, May 27th.*

James Arthur Kinney, of the Town of Kenora, in the District of Kenora, Esquire, Barrister-at-Law, to be Police Magistrate in and for the said Town of Kenora and such portion of the District of Kenora as lies west of the 94th degree of west longitude to the eastern boundary of the Province of Manitoba, in the room and stead of Allan McLennan, Esquire, resigned.—*Gazette, June 3rd.*

Connolly Briggs Hare, of the City of St. Catharines, in the County of Lincoln, Esquire, to be Police Magistrate for the Township of Grantham and the Villages of Port Dalhousie and Merritton.—*Gazette, June 3rd.*

Andrew Bethel Carscallen, of the Town of Wallaceburg, in the County of Kent, Esquire, Barrister-at-Law, to be Police Magistrate in and for the said Town of Wallaceburg, in the room and stead of A. McDougall, resigned.—*Gazette, June 17th.*

George Moore, of the Town of Parry Sound, in the District of Parry Sound, Esquire, to be Police Magistrate in and for the said Town of Parry Sound, in the room and stead of Joseph Farrer, Esquire, resigned.—*Gazette, July 15th.*

Saxon Bismark Arnold, of the City of Chatham, in the County of Kent, Esquire, Barrister-at-Law, to be Police Magistrate in and for the said City of Chatham, in the room and stead of Ward Stanworth, Esquire, resigned.—*Gazette, August 12th.*

John Alexander Makins, of the Township of Easthope, in the County of Perth, to be Police Magistrate in and for the City of Stratford, in the room and stead of James O'Loane, Esquire, resigned.—*Gazette, September 23rd.*

Douglas Davidson, of the Village of Mimico, in the County of York, Esquire, to be Police Magistrate in and for the said Village of Mimico and the West Riding of the said County of York.—*Gazette, September 30th.*

William J. White, of the Town of Bracebridge, in the District of Muskoka, Esquire, to be Police Magistrate in and for the said District of Muskoka, pro tempore, during the absence of James Francis Williams on military service overseas.—*Gazette, November 4th.*

Philo Gilbert White, of the Village of Delhi, in the County of Haldimand, Esquire, to be Police Magistrate in and for the said Village of Delhi.—*Gazette, November 11th.*

John C. Greig, of the Town of Seaforth, in the County of Huron, Merchant, to be Police Magistrate in and for the said Town of Seaforth and for the Townships of Tuckersmith and McKillop, in the room and stead of Francis Holmested, Esquire, resigned.—*Gazette, November 11th.*

Alfred Miers, Police Magistrate in and for the Town of Walkerville, in the County of Essex, Esquire, to be Police Magistrate in and for the said County of Essex, exclusive of the City of Windsor.—*Gazette, November 18th.*

Alexander Earle, of the Village of Creemore, in the County of Simcoe, Esquire, to be Police Magistrate in and for the said Village of Creemore, in the room and stead of John McKay, Esquire, resigned.—*Gazette, December 2nd.*

Jeremiah Daniel Cockburn, of the Town of Sturgeon Falls, in the District of Nipissing, to be Police Magistrate in and for the Towns of Sturgeon Falls and Cache Bay, and the Townships of Springer, Caldwell, Field and Badgerow, in the room and stead of Jesse Bradford, Esquire, resigned.—*Gazette, December 16th.*

Robert E. Gunton, of the Town of Simcoe, in the County of Norfolk, to be Police Magistrate in and for the said Town of Simcoe.—*Gazette, December 23rd.*

Associate Coroners.

James Newell, of the Village of Watford, in the County of Lambton, Esquire, M.D., to be an Associate Coroner in and for the said County of Lambton.—*Gazette, January 22nd.*

David Edwin Howes, of the Village of Shallow Lake, in the County of Grey, Esquire, M.D., to be an Associate Coroner in and for the said County of Grey.—*Gazette, January 29th.*

Amos C. Vaughan, of the Town of Sioux Lookout, in the District of Kenora, Esquire, to be an Associate Coroner in and for the said District of Kenora.—*Gazette, February 12th.*

John G. Hutton, of the Town of Durham, in the County of Grey, Esquire, M.D., to be an Associate Coroner in and for the said County of Grey.—*Gazette, March 11th.*

Joseph Holdcroft, of the Village of Havelock, in the County of Peterborough, Esquire, M.D., to be an Associate Coroner in and for the said County of Peterborough.—*Gazette, March 11th.*

Everett Sayers Hicks, of the City of Brantford, in the County of Brant, Esquire, M.D., to be an Associate Coroner in and for the said County of Brant.—*Gazette, April 8th.*

James Albert Cowper Evans, of the City of Toronto, in the County of York, Esquire, M.D., to be an Associate Coroner in and for the said County of York.—*Gazette, April 8th.*

James Arthur Kinney, of the Town of Kenora, in the District of Kenora, Esquire, Barrister-at-Law, to be an Associate Coroner in and for the said District of Kenora.—*Gazette, April 15th.*

William Ernest Harding, of the Town of Brockville, in the United Counties of Leeds and Grenville, Esquire, M.D., to be an Associate Coroner in and for the said United Counties of Leeds and Grenville.—*Gazette, April 22nd.*

Robert Miller Boyd, of the City of Fort William, in the District of Thunder Bay, Esquire, M.D., to be an Associate Coroner in and for the said District of Thunder Bay.—*Gazette, May 13th.*

Franklin Mortimer Dure, of the Village of Brighton, in the United Counties of Northumberland and Durham, Esquire, M.D., to be an Associate Coroner in and for the said United Counties of Northumberland and Durham.—*Gazette, May 20th.*

Robert Campbell Chanonhouse, of the Village of Richmond, in the County of Carleton, Esquire, M.D., to be an Associate Coroner in and for the said County of Carleton.—*Gazette, May 27th.*

William Edward Anderson, of the Township of Ameliasburg, in the County of Prince Edward (Rossmore P.O.), to be an Associate Coroner in and for the said County of Prince Edward.—*Gazette, June 10th.*

Leslie Roy Aiken, of the Village of Courtright, in the County of Lambton, Esquire, M.D., to be an Associate Coroner in and for the County of Lambton.—*Gazette, June 10th.*

Leeming Carr, of the City of Hamilton, in the County of Wentworth, Esquire, M.D., to be an Associate Coroner in and for the said County of Wentworth.—*Gazette, July 1st.*

John H. Duncan, of the Town of Bruce Mines, in the District of Algoma, Esquire, M.D., to be an Associate Coroner in and for the said District of Algoma.—*Gazette, July 1st.*

Frederick William McKee, of the Town of Cache Bay, in the District of Nipissing, Esquire, M.D., to be an Associate Coroner in and for the said District of Nipissing.—*Gazette, July 15th.*

William J. Chapman, of the City of St. Catharines, in the County of Lincoln, Esquire, M.D., to be an Associate Coroner in and for the said County of Lincoln.—*Gazette, July 22nd.*

Wilfred Gilmour Reive, of the Village of Arthur, in the County of Wellington, to be an Associate Coroner in and for the said County of Wellington.—*Gazette, July 22nd.*

Frederick David Canfield, of the Town of Ingersoll, in the County of Oxford, Esquire, M.D., to be an Associate Coroner in and for the said County of Oxford.—*Gazette, July 22nd.*

William Jamieson, of the Town of Dunnville, in the County of Haldimand, to be an Associate Coroner in and for the said County of Haldimand.—*Gazette, July 29th.*

Henry Allen Turner, of the Village of Millbrook, in the United Counties of Northumberland and Durham, Esquire, M.D., to be an Associate Coroner in and for the said United Counties of Northumberland and Durham.—*Gazette, July 29th.*

Harold Christopher Kindred, of the Village of Tweed, in the County of Hastings, Esquire, M.D., to be an Associate Coroner in and for the said County of Hastings.—*Gazette, July 29th.*

Henry L. Blair, of the Town of Dryden, in the District of Kenora, Esquire, M.D., to be an Associate Coroner in and for the said District of Kenora.—*Gazette August 12th.*

John Vincent Guilfoyle, of the City of Toronto, in the County of York, Gentleman, Solicitor of the Supreme Court of Ontario, to be a Notary Public in and for the Province of Ontario.—*Gazette, August 12th.*

Morell Oldham, of the Village of Desboro, in the County of Grey, Esquire, M.D., to be an Associate Coroner in and for the Counties of Grey and Bruce.—*Gazette, August 19th.*

Henry L. Blair, of the Town of Dryden, in the District of Kenora, Esquire, M.D., to be an Associate Coroner in and for the said District of Kenora.—*Gazette, September 16th.*

James Stuart McCullough, of the Town of New Liskeard, in the District of Temiskaming, Esquire, M.D., to be an Associate Coroner in and for the said District of Temiskaming pro tempore during the absence of Dr. A. J. Fisher, on Active Service.—*Gazette, November 11th.*

Patrick Gannon Mulloy, of the Village of Morrisburg, in the County of Dundas, Esquire, M.D., to be an Associate Coroner in and for the United Counties of Stormont, Dundas and Glengarry.—*Gazette, December 2nd.*

APPENDIX "M."

SHERIFFS' POUNDAGE.

A paper read before the Sheriffs' Association at Toronto, 17th March, 1916, by Roderick James Maclennan, of Osgoode Hall, Barrister-at-Law.

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SHERIFF'S POUNDAGE.

1. **Defined.**—Poundage in law is an allowance to a sheriff or similar officer, computed by a percentage on the value of the property seized, or the amount of the judgment satisfied, as a compensation for the risk and trouble which are incident to the performance of this branch of his duties in executing the King's writs. In the earliest English Statute the word poundage is not used, but the sheriff's recompense is limited to a varying percentage according as the amount levied is under or over £100. In the many statutes of subsequent years, in both England and Canada, the term poundage regularly appears and is associated with fees and expenses. It is reasonable to assume that the derivation of the term poundage is from the English pound sterling.

2. **At Common Law.**—Originally, or at Common Law, the sheriff was not entitled to an allowance for executing writs, his office was regarded solely as an honourary one, and hence it was that men of wealth and substance were usually elected to fill this post. This fundamental maxim of the Common Law was confirmed by statute as early as 1274, when it was declared "that no sheriff nor other

the King's officer shall take any reward to do his office, but shall be paid of that which they take of the King, and he that so doth shall yield twice as much and shall be punished at the King's pleasure." [1]

It is said that this, instead of being advantageous to the subject, proved only oppressive, and opened the door to extortion, and that sheriffs became backward in executing writs, by reason of the great danger in taking and detaining desperate men and for fear of escapes. It was necessary that they should have a great reward, as otherwise they would do nothing. In the progress of society and the growth of commerce, the duties of the sheriff became attended with considerable expense, with the result that the office became extremely onerous, until the Legislature in England by different Acts of Parliament entitled the sheriff to certain fees and dues in which is included poundage.[2]

3. English Statutes.—In 1587 the first English Statute was passed, in the 29th year of the reign of Queen Elizabeth. It was entitled an Act to prevent extortion in sheriffs, under-sheriffs and bailiffs in cases of execution. It provided that in executing a writ upon the *body, lands, goods* or *chattels* of any person, the sheriff was not to take more consideration or recompense than 12d. for every 20s. (5 per cent.) when the amount levied did not exceed £100, and 6d. for each 20s. (2½ per cent.) when the sum was over £100. For any infraction, the sheriff was to pay treble damages, and £40 of good and lawful English money. It will be noted that poundage was to be paid in the three cases of writs against the *body, lands* and *goods,* and also that it was paid by the creditor out of the proceeds of his judgment. and not by the debtor in addition to the debt.[3]

In the construction of this statute it was held that it gave the sheriff by implication the right to demand his poundage, and if not paid to maintain an action of debt for it.[4]

In 1716 it was provided by Statute that when the sheriff made an arrest under a writ of *ca. sa.* the poundage was to be computed on the debt as endorsed on the writ,[5] and in 1767 it was enacted, that the Statute of Elizabeth did not allow poundage, where the sheriff made an arrest in proceedings upon a bail bond, or where the arrest was for a penalty under the custom laws.[6]

In 1803, for the first time, it was provided that the poundage in levies under an execution against goods, should thereafter be collected by the creditor from his debtor, over and above the amount of the judgment.[7]

4. Ontario Statutes.—Passing to Upper Canada, in 1809 the first statute dealing with poundage was enacted. It was copied from the English Act of 1803, and gave the execution creditor the right to collect from the debtor the poundage fees and expenses over and above the sum recovered by the judgment, in the case of writs against *goods* only.[8]

In 1822 the law was extended. so as to provide for poundage when the writ was against the debtor's *person* or *lands* as well as *goods*, and that the levy was to be made by the sheriff instead of by the creditor.[9]

[1] Buchanan *v.* Frank (1865), 15 U.C., C. P. 197; 3 Ed. I, chap. 26; 23 Hy. 6, chap. (1445).
[2] Impey and Dalton on Sheriffs.
[3] 29 Eliz., chap. 4, sec. 1. Imperial.
[4] Impey on Sheriffs, 1835, p. 156.
[5] 3 Geo. I, chap. 15, sec. 17. Imperial.
[6] 7 Geo. III, chap. 29, sec. 1. Imperial.
[7] 43 Geo. III, chap. 46, sec. 5.
[8] 49 Geo. III, chap. 4, sec. 3. (Ont.)
[9] 2 Geo. IV, chap. 1, sec. 19. (Ont.); In *re* Duggan Coroner (1853), 2 U.C., Q.B. 118.

In 1888 the law was revised and consolidated in the Rules of Court. The words *person, lands* and *goods* were dropped, and the Rule read: Upon *every execution* there may be levied in addition to the sum recovered by the judgment the poundage fees and expenses of execution, and this is the present law as set out in Rule 570.[10]

5. General Requirements.—Poundage is meant to cover the risk and responsibility which is cast upon the Sheriff, when he seizes, retains possession of and sells the debtor's property, and from this levy returns the money and is in addition to the fees and expenses.[11]

The poundage is to be levied in addition to the judgment debt,[12] and to entitle the Sheriff to his poundage he must generally levy, that is seize and get the money.[13]

The word levy does not mean that the money must actually go through the Sheriff's hands, for if that were so it would always be in the power of the defendant, after his goods are seized, to avoid payment of the Sheriff's poundage by paying the money to the plaintiff.[14]

A promise to pay poundage when the law does not make provision for it, cannot be enforced.[15]

6. When Instructions Not to Seize.—Poundage is founded on a writ of execution, which issues in the name of the Sovereign, and is a command from the Chief Justice of the Superior Court (or Senior Judge of a County Court) and is signed on his behalf and the Court seal is affixed by an officer of the Court. It directs the Sheriff to make the money, and to return the proceeds of goods immediately, and the proceeds of lands immediately after twelve months. Notwithstanding this formal command from the Court to its officer, the solicitor for the creditor will, at times, assume to give contrary instructions, and direct the Sheriff to file the execution and take no action. It is not unreasonable for a Sheriff to decline to take a *fi. fa.* under such circumstances, as it may affect his own and the creditors' rights to costs.

In 1901 the Sheriff of Rainy River received an execution by mail with instructions as follows: "You need not make seizure on the debtor's property chattels, unless I further advise you, except that the placing of the writ keeps everything in the debtor's possession under seizure." After a petition had been presented for the winding up of the debtor, a joint stock company, the Sheriff was directed to seize, and did seize, and later, when a winding-up order was made, he withdrew from possession. The execution creditor claimed as a preferred lien his costs and those of the Sheriff. It was held, that if the creditors had had an execution in the Sheriff's hands binding the goods of the company, they would have had a lien for their costs, and the Sheriff would have been bound, on the request of the claimants, to proceed to realize the amount of such costs. But the *fi. fa.* did not bind the goods of the debtor company, as it was not in the hands of the Sheriff to be executed, for the Sheriff had been instructed not to seize until further advised, and the Sheriff was not advised until after the winding-up petition had been presented. The lien for costs was accordingly denied.[16]

[10] Rule 890 of 1888, Rule 871 of 1897 and Rule 570 of 1913.

[11] Wadsworth *v.* Bell (1881), 8 P.R. 478; Merchants Banks *v.* Campbell (1881), 32 U.C., C.P. 177.

[12] Rule 670 of 1913.

[13] Halsbury's Laws of England, Vol. 14, p. 33. See in *re* Duggan Coroner (1853), 2 U.C., Q.B. 118.

[14] Brown *v.* Johnson (1859), 5 U.C., L.J. 17.

[15] Davies *v.* Davidson (1868), 14 Grant 206.

[16] *Re* Saw Bill Lake Gold Mining Co. (1903), 2 O.W.R. 1,143.

7. The Seizure Must be Legal.—The right to poundage depends upon a valid levy, that is the Sheriff must take the goods of the judgment debtor. It often happens after a seizure that the goods are claimed by a third party, and an interpleader results, in which the Sheriff sells the goods. In such a case he is required to pay the whole proceeds into Court, suspending his claim to poundage until after the trial of the interpleader issue. If the creditor succeed the Sheriff will be allowed his poundage, if the creditor fail the Sheriff gets no poundage, and not even an allowance under Rule 686 (1).[17]

If the execution creditor succeed as to part of the goods seized, the Sheriff will be allowed poundage on such part.[18]

8. Where no Seizure.—Generally if the Sheriff do not seize he is not entitled to poundage, although the money be paid or tendered to him after he has received the writ for execution.[19]

Where, however, the Sheriff's officer went with a warrant to the debtor's premises and demanded payment, saying that a man would be left in possession, and the debtor paid the debt with fees and poundage, it was held that there had been in substance a levy, and that the Sheriff was entitled to hold his poundage although there had been no seizure.[20]

9. Constructive Levy.—The doctrine of constructive levy is as desirable for the debtor as for the Sheriff, for if the debtor in order to avoid the inconvenience of having his goods seized, prefers to pay the execution, it would be a hardship to place any obstacle in his way. If on the other hand the payment to the Sheriff were to occasion the loss of his poundage, and fees, it would obviously result in the officer refusing to accept payment without first going through the whole process of levy, namely, seizure and sale, in order to entitle him to his fees and poundage; or else the Sheriff would be compelled to endure the hardship of having to forego his fees for services which undoubtedly were instrumental in procuring payment.[21]

10. After Seizure of Goods Before Sale.—If by compulsion of the writ, after seizure, the Sheriff gets the money without sale, he is entitled to poundage. He does not need to proceed to sale to perfect his right.[22]

He is also entitled to it if a compromise is effected by reason of the seizure.[23]

When a seizure is abandoned by reason of a compromise between the creditor and the plaintiff, and an allowance is given the Sheriff, it will be without prejudice to the officer's right to be paid full poundage in case the execution be enforced later.[24]

11. Statute Giving Allowance When No Sale.—In Ontario it was decided in 1859 to make provision for poundage in the many cases in which, after

[17] Turner *v.* Crozier (1891), 14 P.R. 272.

[18] Ontario Silver Co. *v.* Tasker (1893), 15 P.R. 180.

[19] Richards *v.* Producer's Rock & Gravel Co. (1914), 17 D.L.R., p. 589.

[20] Bissicks *v.* Bath Colliery Co., 2 Exch. Div. 459; Consolidated Bank *v.* Bickford (1877), 7 P.R. 172; See Contrary, Buchanan *v.* Franks (1865), 15 U.C., C.P. 196.

[21] Churchill on Sheriffs, p. 309; Miles *v.* Harris, 12 C.B., N.S. 651.

[22] Halsbury's Laws of England, Vol. 14, p. 53; Mortimore *v.* Cragg (1878), 38 L.T., N.S. 800; Rex. *v.* Robinson (1835), 2 C.M.R., 334.

[23] Alchin *v.* Wells (1793), 5 T.R. 470; Morris *v.* Boulter (1850), 2 Ch. Rep. 60; Creswell *v.* Hunt (1862), 1 P. Ed. I, R. 191; Buchanan *v.* Frank (1865), 15 U.C., C.P. 196.

[24] McRoberts *v.* Hamilton (1877), 7 P.R. 95.

seizure, the Sheriff is stayed and does not complete the levy. This law is found in Rule 686 (1), and provides that where the personal estate, except chattels real, of a judgment debtor is seized or advertised on or under an execution, but not sold by reason of satisfaction having been otherwise obtained, or from *some other cause,* and no money is actually made by the Sheriff on or by force of the execution, the Sheriff shall be entitled to the fees and expenses of execution and *poundage* only on the value of the property seized, not exceeding the amount endorsed on the writ, or such less sum as the Court may deem reasonable.[25]

There have been many decisions upon this provision.

12. **Satisfaction Without Sale.**—Some of the cases in which satisfaction has been obtained, in some other way than by a sale of the debtor's goods, are: where a settlement is made between the creditor and the debtor;[26] or where the execution is stayed upon a re-hearing, after which the unsuccessful defendant pays the plaintiff.[27]

13. **When No Money Made.**—The words "from some other cause" are not to be read as referring to some other cause, in the nature of a satisfaction or settlement of the claim, and, therefore, they apply where the writ of execution has been set aside;[28] or where proceedings are stayed by an injunction and the creditor withdraws the *fi. fa.*;[29] or the Sheriff is withdrawn by a third party who has obtained control of the judgment;[30] or when the execution is superseded upon an appeal.[31]

14. **Prima Facie Full Poundage.**—Prima facie, under this Rule, the Sheriff is entitled to his full poundage, and the onus is on the execution creditor to apply to the Court to reduce the amount.[32]

Where the levy has been stopped by an assignment for creditors, and it appears that the Sheriff has seized enough to realize the execution in full, he will be awarded full poundage;[33] or where winding-up proceedings have intervened he will be given his full poundage, and not a reduced sum.[34]

The Sheriff will be allowed to produce evidence to shew what charges should be allowed to him.[35]

15. **Amount of Allowance.**—The amount of the allowance depends upon the value of the property seized and its nature, as well as on the length of the

[25] 7 Wm. IV (1837), chap. 3, sec. 32; Commercial Bank *v.* Van Norman (1840), T.T. 3 and 4 Vict.; 9 Vict. (1846), chap. 56, secs. 1 and 2; C.S., U.C. (1859), chap. 22, sec. 271; 31 Vict. (1868), chap. 24, sec. 4; R.S.O. 1877, chap. 66, sec. 45; Rule 1233 of 1888; Rule 1190 of 1897 and Rule 686 (1) of 1913; Gwynne *v.* The Grand Trunk Railway Co. (1865), 24 U.C., Q.B. 482; Buchanan *v.* Franks (1865), 15 U.C., C.P. 196; in *re* Murphy 7 Terr. L.R. 271.

[26] Davies *v.* Davidson (1868), 14 Grant 206; McRoberts *v.* Hamilton (1877), 7 P.R. 95; Wadsworth *v.* Bell (1881), 8 P.R. 478.

[27] Winters *v.* Kingston Permanent Bldg. Society (1870), 1 Chy. Cham. 276.

[28] Morrison *v.* Taylor (1882), 9 P.R. 390;

[29] Brockville & Ottawa Ry. Co. *v.* Canada Central Ry. Co. (1878), 7 P.R. 372;

[30] Bowman *v.* Mason (1881), 1 C.L.T. 109;

[31] Weegar *v.* Grand Trunk Ry. Co. (1894), 16 P.R. 371.

[32] Brockville & Ottawa Ry. Co. *v.* Canada Central Ry. Co. (1878), 7 P.R. 372; Davies *v.* Davidson (1868), 14 Grant, 206; Morrison *v.* Taylor (1882), 9 P.R. 390; Campbell *v.* Wilson & Strathdee, Ltd., 7 W.W.R. 337.

[33] Smith *v.* Antopitzky (1890), 10 C.L.T. Occ. N. 368;

[34] In *re* Black Eagle Mining Co. (1903), 6 O.L.R. 512.

[35] Winters *v.* Kingston Permanent Bldg. Soc. (1870), 1 Chy. Cham. 276; See also *re* Murphy (1902), 7 Terr. L.R. 271 Saskt.

seizure and the responsibility assumed. The following amounts have been awarded. In 1865 the allowance was £8. 11s. 3d. where the judgment debt was £1,160.[36]

In 1877 the adjustment of a debt of $1,100 was made immediately after the seizure, and as nothing of importance was done $10 was given.[37]

In 1878, where the Sheriff had advertised, and there had been many adjournments and a large number of communications, so that the Sheriff's responsibility continued for a length of time, it was said that he should be liberally compensated, and he was awarded $175. about one-third of full poundage.[38]

In 1881 a Sheriff seized property worth $50,000. less than the debt, and advertised and was in possession about two weeks. The Master allowed $69, but on appeal this was increased to $150.[39]

In 1881 a Sheriff had seized, took a bond, advertised, and on the day of sale was notified that the debt had been paid. Seven months later he made the same seizure and the same course followed. He claimed the ordinary poundage in each case, $57 and $46. On an application by the defendant to reduce the amount, Blake, V.C., said he was surprised to see what small allowances were made to the Sheriff, where the process had been intercepted, but was bound to follow the cases and could not allow more than $20 for each seizure.[40]

In 1894 a Sheriff seized goods of a railway company, sufficient to satisfy a debt of $1,400, and learning that there was to be an appeal he withdrew from possession to save expense. He was allowed $20.[41]

16. Writs to Several Counties.—When executions issue on the same judgment against goods to two or more Sheriffs, it is possible that all may seize, in which event it would be a hardship on the debtor to be obliged to pay poundage more than once, and it would also be a hardship on a Sheriff to be deprived of remuneration for his services, in case he had seized and had to withdraw. It was accordingly enacted in 1837, now Rule 687, that in such a case the Sheriff shall not be entitled to poundage, but to mileage and fees only for the services actually rendered and performed, and the Taxing Officer may allow the Sheriff a reasonable charge for such services in case no special fee therefor is assigned in any tariff of costs.[42]

The Rule does not say by whom the allowance is to be paid. It was said by Robinson, C.J., in an early decision, that he had always supposed the compensation for double services should be charged against the execution debtor.[43]

Where three Sheriffs actually levied the same debt and collected and retained the poundage, and each claimed the right to retain it, and it appeared that the conduct of the attorney was improper, because the plaintiff was in no danger of losing his debt, the Court ordered the attorney to refund to the defendants the poundage retained by two of the Sheriffs, and to pay the costs of the executions directed to them.[44]

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[36] Thomas *v.* Great Western Ry. Co. (1865), 24 U.C., Q.B. 326.
[37] McRoberts *v.* Hamilton (1877), 7 P.R. 95;
[38] Brockville & Ottawa Ry. Co. *v.* Canada Central Ry. Co. (1878), 7 P.R. 372.
[39] Bowman *v.* Mason (1881), 1 C.L.T. 109.
[40] Wadsworth *v.* Bell (1881), 8 P.R. 478.
[41] Weegar *v.* Grand Trunk Ry. Co. (1894), 16 P.R. 371.
[42] From 1837 to 1859 this law covered goods and lands, 7 Wm. IV, chap. 3, sec. 32; 9 Vict., chap. 56, secs. 1 and 2; From 1859 to 1868 the law was repealed, C.S., U.C., chap. 22, sec. 271; and since 1868 it applies to goods writs only, 31 Vict., chap. 24, sec. 4; R.S.O. 1877, chap. 66, sec. 46; Rule 1234 of 1888; Rule 1192 of 1897 and Rule 687 of 1913, Corbett *v.* Mackenzie (1850), 6 U.C., Q.B. 605.
[43] Henry *v.* Commercial Bank (1859), 17 U.C., Q.B. 104.
[44] Henry *v.* Commercial Bank (1859), 17 U.C., Q.B. 104.

If two Sheriffs have seized, and each claims full poundage, it has been suggested that if there is priority in point of time, the Sheriff who first received an execution should be paid.[45]

17. **Bankruptcy of Debtor.**—In still another way the Sheriff may be prevented from proceeding with his levy, that is when the execution debtor makes an assignment for the benefit of his creditors, or if the debtor be a company, proceedings are taken under a Winding-Up Act. This has an important bearing on the Sheriff's right to poundage.

18. **Under the Assignment Act.**—An assignment for the general benefit of creditors takes precedence of executions not completely executed by payment, subject to the lien, if any, of an execution creditor for his costs where there is but one execution in the Sheriff's hands, or to the lien, if any, for his costs of the creditor who has the first execution in the Sheriff's hands.[46]

The creditor's lien is based on the words in the Execution Act, that a writ of execution shall bind the goods and lands against which it is issued from the time of the delivery thereof to the Sheriff for execution.[47]

The execution creditor's lien covers the costs of execution,[48] and when the Sheriff has seized before an assignment has been made, the poundage also is included in the lien, and the Sheriff is entitled to hold the goods as against the assignee for creditors until his poundage and other fees and expenses are paid.[49]

If the assignee does not discharge the lien, the Sheriff is entitled to proceed and levy the amount of such costs. If the Sheriff does not do so the execution plaintiff loses his lien, and is not entitled to rank on the insolvent's estate as a preferred creditor, while the Sheriff loses his right to poundage.[50]

19. **Dominion Winding-up Act.**—Under the Dominion Winding-Up Act, after a petition for a winding-up order has been presented, and before the order is made, the Court may restrain all further proceedings in any action, suit or other proceeding against the company upon such terms as the court thinks fit.[51]

After the winding-up order is made no action or other proceeding can be commenced or gone on with, except with the leave of the Court, and if, thereafter, any execution is put in force against the estate or effects of the company, it will be void;[52] and consequently a Sheriff is not entitled to poundage on an execution levied subsequently to a winding-up order.[53]

Section 84 provides that no lien upon real or personal property shall be created for the amount of any judgment debt by the delivery to the Sheriff of any execution, or by a levy or seizure under such writ, if before the payment over to the plaintiff of the moneys levied the winding up has commenced, "Provided that this section shall not affect any lien for costs which the plaintiff possesses under the law of the Province in which the writ was issued."

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[45] Brown *v.* Johnson (1859), 5 U.C., L.J. 17.
[46] R.S.O. (1914), chap. 134, sec. 14.
[47] R.S.O. (1914), chap. 80, sec. 10.
[48] Ryan *v.* Clarkson (1890), 16 A.R. 311; 17 S.C.R. 251.
[49] Smith *v.* Antipitzky (1890), 10 C.L.T. Occ. N. 368.
[50] Gillard *v.* Milligan (1897), 28 O.R. 645.
[51] R.S.C. (1906), chap. 144, sec. 18; In *re* Tobique Gypsum Co., Costigan *v.* Langley (1903), 6 O.L.R. 515.
[52] R.S.C. (1906), chap. 144, secs. 22 and 23.
[53] Richards *v.* Producers, etc. Co. (1914), 17 D.L.R. 588; *Re* Saw Bill Lake Gold Mining Co. (1903), 2 O.W.R. 1143.

The Ontario Execution Act, as mentioned above, provides that an execution shall bind the goods and lands against which it is issued from the time it is delivered to the Sheriff.[54]

It follows, therefore, in Ontario, that the execution plaintiff has a lien on his debtor's property for the costs of obtaining his judgment, and the costs and expenses of the execution, and if there has been a seizure this lien also covers the Sheriff's poundage.[55]

This is the lien which the Dominion Winding-up Act recognizes under section 84, and, therefore, if the Sheriff has seized before the winding up has commenced, he is entitled to his poundage. The winding up is deemed to commence at the time of the service of the notice of presentation of the petition.[56]

A Sheriff having seized goods under a *fi. fa.* had advertised them for sale and then followed winding-up proceedings. About an hour before the time for which the Sheriff's sale was advertised, the solicitor for the company paid the Sheriff to stop the sale. It was held in these circumstances that the Sheriff was entitled to his full poundage, and that the rule giving a less sum where there had been no sale did not apply, and also that the poundage should be computed on the sum paid and not on the value of the goods.[57]

In another case the Sheriff seized twenty-four days after a petition to wind up the debtor had been served, and went out of possession when two of the directors gave a bond for the safety of the goods. The winding-up order was made some eight months later. The Sheriff claimed poundage under the Rule which gives full poundage or a less sum when there is no sale. It was held by Winchester, J., in the County Court that the Rule (now 686) did not apply in such a case to give the Sheriff poundage.[58]

20. **Ontario Winding-up.**—The Ontario Companies Act provides, that after the winding up commences, no action or other proceeding shall be proceeded with or commenced against the corporation, and that no attachment, sequestration, distress or execution shall be put in force against the estate or effects of the corporation, except by leave of the Court, and subject to such terms as the Court may impose.[59]

A voluntary winding up commences when a resolution is passed authorizing the act,[60] and when under an order of the Court, at the time of service of notice that a petition will be presented.[61]

There are apparently no reported decisions under the Ontario Act. If a Sheriff is in possession before the winding up commences it seems only right that the execution creditor should have a preferred claim for his costs, which would include the Sheriff's poundage, following the decisions under the Dominion Act; and this upon enquiry seems to be the practice in the office of the Master in Ordinary.

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[54] R.S.O. (1914), chap. 80, sec. 10.

[55] In *re* Heyden, an Insolvent (1869), 29 U.C., Q.B. 262; Ryan *v.* Clarkson (1890), 16 A.R. 311; 17 S.C.R. 251.

[56] R.S.O. (1914), chap. 144, sec. 5.

[57] In *re* Black Eagle Mining Co. (1903), 6 O.L.R. 512.

[58] *Re* Palmerston Packing Co. (1904), 4 O.W.R. 339; See also *re* Oshawa Heat, Light and Power Co. (1906), 8 O.W.R. 415, where the cost were allowed, to the date after the winding-up order, at which the liquidator asked for possession.

[59] R.S.O. (1914), 178, sec. 173.

[60] Sec. 170.

[61] Sec. 189.

21. **Municipal Corporations.**—When an execution is against a municipal corporation, the Sheriff does not seize and sell municipal property, but under section 37 of the Execution Act, he proceeds to strike a rate and levies the debt, with interest and Sheriff's fees, through the collector of the corporation. When he receives the money he satisfies the execution, with all the fees and *poundage*, and pays any surplus to the treasurer of the municipality.[62]

In 1865 the Sheriff of Wentworth, under about 100 executions against the City of Hamilton, proceeded to collect $200,000. After a good deal of trouble and delay in getting possession of the assessment rolls, he struck a rate, but before he could get the collector at work with the levy the debt was paid by the municipality. He claimed $216.30 as fees, $880.91 disbursements, and his full poundage, $4,805.96. The Court treated the case as one in which the Sheriff had seized but had not sold, and awarded him the fees and disbursements and $1,081.61 instead of his full poundage.[63]

22. **Personal Estate.**—Personal Estate is a wide term and includes many different kinds of property which may be seized under an execution against goods. Preceding section 12 of the Execution Act is the heading "Seizure of certain interests under execution against goods." Included thereunder are the following: Shares and dividends in incorporated banks and companies and other property or interest therein; patents of invention; property, interest or equity of redemption in goods, chattels or personal property and including leasehold interest in land; money and bank notes as well as cheques, bills of exchange, promissory notes, bonds, mortgages and other securities and the interest of an execution debtor as mortgagee of land. It would seem that if any of such personal property be seized under the special provisions provided, and the matter is settled without a sale, the Sheriff is entitled to his poundage or to an allowance in lieu thereof.[64]

When the personal estate consists of chattels real, the Sheriff's right to poundage is provided for under Rule 686 (2), covering the case where lands or chattels real have been advertised, etc. Under the term chattels real are included an equity of redemption and certain contingent interests in land and leasehold interests.

23. **On Land Writs.**—Prior to 1837 there was no right to poundage in respect of a land writ unless the Sheriff sold the property. In this respect the rule was different from the practice of allowing poundage in certain cases where goods had been seized, but not sold.[65]

From 1837 to 1868 the Sheriff might in certain cases have an allowance in lieu of poundage, where he had advertised land but had not sold it.[66]

There are no reported decisions in this period on the amount of the reasonable charge which might be awarded the Sheriff for his services rendered.[67]

In 1868 the law providing for an allowance was repealed;[68] and until 1894

[62] R.S.O. 1914, chap. 80, sec. 37.

[63] Grant *v.* The Corporation of the City of Hamilton (1865), 2 C.L.J. 262. It is difficult to understand the reasoning of this decision. The reduction might now be made under Rule 688 of 1913.

[64] R.S.O. chap. 80, secs. 12 to 29.

[65] Gates *v.* Crooks (1834), 3 U.C., Q.B., O.S. 286; Leeming *v.* Hagerman (1834), 5 U.C., Q.B., O.S. 38; Morris *v.* Boulton (1850), 2 Cham. Rep. 60.

[66] 7 Wm. IV, chap. 3, sec. 32 (1837); C.S., U.C., chap. 22, sec. 271 (1859); 31 Vict., chap. 24, sec. 4 (1868).

[67] See Morris *v.* Boulton (1850), 2 Chamb. Rep. 60, where poundage was claimed and refused; also Creswell *v.* Hunt (1862), 1 P. Ed. I, R. 191.

[68] 31 Vict., chap. 24, sec. 4. (Ont.)

there was no provision for any recompense whatever, unless there had been an actual sale of the land by the Sheriff.[69]

In the last mentioned year the present law in Rule 686 (1) was first enacted. It provides that where lands or chattels real have been advertised under an execution, but not sold by reason of payment or satisfaction having been otherwise obtained, on or within one month before the day on which the property advertised is to be sold, or any day to which the sale may be adjourned, the Sheriff shall be entitled, in addition to the fees and expenses, to poundage on the value of the debtor's interest in the property, not exceeding the amount endorsed on the writ, or such less sum as the Court may deem reasonable.[70]

24. Other Writs Than Fi. Fas.—Rule 570 provides that upon every execution there may be levied, in addition to the judgment debt and interest, the poundage fees and expenses of execution. By Rule 3 (k) execution is declared to include all writs by which a judgment may be enforced. In addition to writs of *fi. fa.* there are the following other writs provided for: Possession, delivery, *capias ad satisfaciendum*, attachment for contempt, sequestration and assignment of dower. Item six in the Tariff provides a nominal charge of $12 for executing each of these writs (except dower) *exclusive of poundage* when chargeable. It is needless to say that $12 is not an adequate sum to cover all the risk taken and responsibility incurred by the Sheriff in some cases. Under item seven of the Tariff, poundage on executions is computed on the sum made, and accordingly item seven does not properly cover all the other writs of execution mentioned above, because under some of them no money is to be made. Section 30 of the Sheriffs' Act may be invoked, as it provides, that when a Sheriff is directed by the Court to perform any service or do any act for which no fee is provided, the Sheriff may be allowed such fee as the Court may think fit.[71]

There are apparently no reported decisions on the statute law as it now stands upon the Sheriff's right to poundage, in respect to such other writs, except writs of *ca. sa.* which will now be reviewed.[72]

25. On Writs of Ca. Sa.—The English Statute of Elizabeth provided for poundage under an execution against the *body*, as well as against the goods and lands of the debtor.[73]

This law was enacted in Upper Canada in 1822, when it was provided that on any execution against the *person*, lands or goods of a debtor the Sheriff might lawfully levy the poundage over and above the judgment debt.[74]

The wording of the statute so continued till 1888, when the text was changed to provide that poundage should be levied upon every writ, and the three words "*person*," "*lands*" *and* "*goods*" were all dropped.[75]

In England, in 1842, the Sheriff's right to poundage on a *ca. sa.* was taken away:[76] but this has not been done in Ontario.

[69] Merchants Bank *v.* Campbell (1881), 32 U.C., C.P. 170; French *v.* Lake Superior Mineral Co. (1892), 14 P. R. 541; Cox *v.* Murphy (1872), 1 P. Ed. I, R. 412.

[70] Rule of 29th Sept., 1894; Rule 1190 (2) of 1897; Rule 686 (2) of 1913.

[71] R.S.O. (1914), chap. 16, sec. 30.

[72] See an early decision in *re* Duggan Coroner (1853), 2 U.C., Q.B. 118, in which it was held that poundage is not payable under a writ of attachment because the tariff does not cover it.

[73] 29 Eliz., chap. 4, sec. 1.

[74] 2 Geo. IV, chap. 1, sec. 19.

[75] C.S., U.C., chap. 22, sec. 271 (1859); R.S.O. (1877), chap. 66, sec. 44; Rule 890 of 1888; Rule 871 of 1897 and Rule 570 of 1913.

[76] 5 and 6 Vict., chap. 90, sec. 31.

In 1850 an Ontario Sheriff claimed poundage under a writ of *Capias ad Satisfaciendum,* where he had arrested the debtor and the latter had subsequently been discharged as an insolvent under the bankruptcy law then in force. It was urged against the claim that the Sheriff had levied no money and that the law had been changed in England. He was nevertheless allowed his poundage. It was pointed out that under a *ca. sa.* the Sheriff does not levy money, as in the case of a *fi. fa.*; if paid, it is received by the creditor or his solicitor. When the Sheriff has taken the body he has fully executed the writ, so far as making the debt is concerned, and (under the law at that time) the Sheriff became liable for the whole debt, if the debtor escaped, and this was a heavy responsibility. The Sheriff's right to poundage could not be divested by any act of the law or the Court, or by the death of the party, because these are matters over which the Sheriff has no control.[77]

In 1886 another case came up for decision. A debtor had been arrested under *ca. sa.* and by some arrangement with the creditor had been released. The Sheriff claimed his poundage. Against the claim it was urged that no money had been made, and that by a change in the law the Sheriff was no longer liable for the whole debt, if the debtor escaped, but only for actual damages. It was again held that by the mere arrest of the debtor in execution the Sheriff becomes entitled as of right to his full poundage. Whether the debtor afterwards regains his liberty or remains in close custody is not a matter which the Sheriff can control or with which he is concerned.[78]

26. **Writ of Possession.**—In England provision is made that the Sheriff on executing a writ of possession shall have poundage of 1d. in the pound on the yearly value of the lands delivered, when the whole yearly value does not exceed £100, and 6d. in the pound for every pound above that sum.[79]

There is no such law in Ontario and a Sheriff must invoke the authority of Rule 570, which gives poundage upon every execution.

27. **Writs of Extent, etc.**—A writ of extent is the peculiar remedy to recover debts of record due to the Crown. It differs from an ordinary writ of execution at the suit of a subject, because under it the body, lands and goods of the debtor may all be taken at once in order to compel the payment of the debt. It is not usual, however, to seize the body.[80]

A mode of procedure is set out in the Estreats Act, and the form of the Writ of Execution and Capias is appended to the Statute.[81]

It was early decided, following the English practice, that the Sheriff was entitled to poundage for executing such writs even where, after seizure and before sale, the debtor paid the debt.[82]

In another case, where after a levy by the Sheriff on an estreated recognizance, the Crown discharged the estreat on payment of the Sheriff's fees, it was held that the Sheriff was entitled to his poundage.[83]

28. **By Whom Payable.**—If for any reason the Sheriff is prevented from making his poundage out of the debtor's goods or lands, the question arises to

[77] Corbett *v.* McKenzie (1850), 6 U.C., Q.B. 605.
[78] McNab *v.* Oppenheimer (1886), 11 P.R. 348.
[79] 3 Geo. I (1716), chap. 15, sec. 16. (Imperial.)
[80] Wharton, p. 288.
[81] R.S.O. (1914), chap. 98.
[82] Regina *v.* Patton (1852), 9 U.C., Q.B. 307.
[83] Regina *v.* Winning (1840), H.T. 3 Vict.

whom can the Sheriff look for his poundage. It has been held that his immediate remedy is ordinarily against the party who sets him in motion, that is the execution creditor.[84]

No action for poundage lies by the Sheriff against the solicitor for the execution creditor, where the solicitor has done nothing more than deliver the writ to the Sheriff for execution;[85] nor can the Sheriff maintain an action against the execution debtor for poundage.[86]

Where a Sheriff has levied the debt under an execution which is afterwards set aside, and the money is paid back, he is nevertheless entitled to recover his fees and poundage in an action of debt against the plaintiff in the execution. It is not the fault of the Sheriff that the writ is irregular, and he is not to be deprived of his poundage on that account.[87]

29. How Computed.—A Sheriff is entitled to poundage only on the sum he makes and has to pay over, and not on that which he retains for himself. He cannot charge it on the gross amount of the same.[88]

If the amount levied covers rent due the landlord, as well as the judgment debt, poundage will be computed on both.[89]

Under Rule 686 (1), if part only is made on or by force of an execution against goods, the Sheriff is entitled to poundage only upon the amount so made, no matter what may be the sum endorsed upon the writ.[90]

Although the Rule only specifies writs against goods and chattels, it seems but fair to assume that poundage should be computed in the same way, when part is made under a *fi. fa. lands*. In the tariff itself the provision is that poundage is charged on the sum made on executions and on attachments.[91]

Poundage is computed on the sum made on executions and attachments at the following rates: First, in the Supreme Court up to and including $1,000, 6 per cent.; over $1,000 and up to and including $4,000, 3 per cent.; and on the excess over $4,000, 1½ per cent.: Second, in County Court cases the rate is 5 per cent. on the sum made. Such poundage is exclusive of mileage and of all reasonable and necessary actual disbursements.[92]

When there are several executions the Creditors' Relief Act provides that the Sheriff shall not be entitled to poundage as upon separate executions or certificates, but only upon the net proceeds distributable by him, at the same rate as if the whole had been payable upon one execution.[93]

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[84] Thomas *v.* Cotton (1853), 12 U.C., Q.B. 148; Winters *v.* Kingston Permanent Building Society (1870), 1 Chy. Cham. 276; Morrison *v.* Taylor (1882), 9 P.R. 390.

[85] Corbett *v.* McKenzie (1850), 6 U.C., Q.B. 605; See Henry *v.* Commercial Bank (1859), 17 U.C., Q.B. 104, where a solicitor because of misconduct was ordered to pay poundage.

[86] Thomas *v.* Cotton (1853), 12 U.C., Q.B. 148; Thomas *v.* Great Western Ry. Co. (1865), 24 U.C., Q.B. 306. But see Henry *v.* Commercial Bank (1859), 17 U.C., Q.B. 104.

[87] Morrison *v.* Taylor (1882), 9 P.R. 390; Henry *v.* Commercial Bank (1859), 17 U.C., Q.B. 104; Thomas *v.* Cotton (1853), 12 U.C., Q.B. 148.

[88] Michie *v.* Reynolds (1865), 24 U.C., Q.B. 308; Hamilton *v.* Gore Bank (1873), 20 Gr. 190.

[89] Davies *v.* Edward, 12 M. & W. 31.

[90] Rule 686 (1) of 1913.

[91] Rules of 1913, Tariff C, item 7.

[92] Tariff C, item 7, Rules of 1913; Fleming *v.* Hall (1882), 9 P.R. 310.

[93] R.S.O. (1914), chap. 81, sec. 29. Before the Creditors' Relief Act was passed the rule was different and poundage was computed on each fi. fa. separately, Grant *v.* Grant (1883), 10 P.R. 40.

30. In Garnishee Proceedings. —When a Sheriff receives money from a garnishee, and distributes it under the Creditors' Relief Act, he is entitled to poundage at the rate of 1¼ per cent.[94]

If, however, he is required to transfer the moneys received under an order of attachment to another Sheriff for distribution, the Court or a judge fixes the compensation to be paid for the services of the Sheriff who received the money from the garnishee.[95]

31. In Interpleader. —In interpleader proceedings, when an issue is directed, and the property seized remains pending the trial of the issue in the custody of the Sheriff, the Court may make an order for the payment to the Sheriff of a reasonable sum for his trouble in and about the custody of the property, and the Sheriff shall have a lien upon the property for the payment of the same, in case it turns out that the goods were exigible as against the claimant.[96]

32. Taxation.—A Sheriff cannot collect his poundage, if any party interested requires it to be taxed, until after the taxation. The Taxing Officer cannot give a Sheriff less than the amount specified in the Tariff.[97]

When after seizure a Sheriff is stayed because the debt has been levied in another County, it is the Taxing Officer who awards a reasonable charge for the services rendered, in case there is no special fee in the tariff;[98] but in other cases, where a sale of goods or lands is stayed, it is the Court, not the Taxing Officer, who determines what reasonable sum shall be paid the Sheriff instead of his full poundage.[99]

In a general way, any person dissatisfied with the amount of the Sheriff's poundage may have it reviewed by the Court, and there is power to reduce it, notwithstanding it is according to the tariff. It may be reduced even after the Sheriff has been paid.[100]

33. Misconduct by Sheriff.—A Sheriff may by his own conduct deprive himself of a right to an allowance in lieu of poundage. Thus, where in the face of many directions from the plaintiff's attorney to proceed on the writ, a Sheriff delayed at the defendant's request, to enable the latter to get, if possible, an extension of time, the allowance was refused. In this case the Court remarked that this Sheriff was not the first one, who, after going out of his way and incurring serious risk to serve another, had, notwithstanding the great service he has rendered, received neither pay nor thanks for his pains.[101]

R. J. MACLENNAN.

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[94] R.S.O. (1914), chap. 81, sec. 5 (7).
[95] Ib. Sec. 5 (4).
[96] Rule 642 of 1913. See also above under "The seizure must be legal."
[97] Rule 683 of 1913; See also R.S.O. (1914), chap. 16, sec. 32; Gwynne *v.* The Grand Trunk Railway Co. (1865), 24 U.C., Q.B. 482; Davies *v.* Davidson (1868), 14 Grant 206.
[98] Rule 687 of 1913.
[99] Rule 686 of 1913.
[100] Rule 688 of 1913.
[101] Gillespie *v.* Shaw (1864), 10 U.C., L.J. 100.

ANNUAL REPORT

OF THE

Inspector of Registry Offices

FOR THE

PROVINCE OF ONTARIO

1916

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1917

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

To His Honour Sir John Strathearn Hendrie, K.C.M.G., C.V.O., a Colonel in the Militia of Canada, etc., etc., etc.

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned begs respectfully to present to Your Honour the annual report of the Inspector of Registry Offices for the year 1916.

I. B. Lucas,

Attorney General.

Toronto, March 22nd, 1917.

REPORT

OF THE

INSPECTOR OF REGISTRY OFFICES

FOR THE YEAR 1916

To the Honourable I. B. Lucas, K.C.,

Attorney General of the Province of Ontario.

Sir,—I have the honour to present the report of the Inspector of Registry Offices for the year ending December 31st, 1916.

During the year I visited all of the Counties and Judicial Districts of the Province and with the exception of four of the offices completed my inspections before the close of the year.

The Annual Returns of the Registrars, which by Section 99 of the *Registry Act* they are required to transmit to the Hon. the Provincial Secretary, show a decline in their incomes for the past few years.

Details of the business of the Registry Offices will be found in the tabulated Statements shown as Schedules "A" and "B" in the appendix to this Report.

I have also included as Schedule "C" an additional table, from which may be seen at a glance particulars of the Gross and Net Receipts, the Disbursements, and the Net Income of each Registrar, as well as the amounts paid the Municipalities under Section 101 of the *Registry Act*.

From a perusal of this schedule it will be seen how inadequate is the remuneration of the Registrars, notwithstanding the popular notion that they are in receipt annually of large sums.

Thirty-four had incomes during 1916 less than $1,500, and of these seven had incomes under $700.

7	had	incomes	under	$700			
5	"	"	over	700	and	under	$800
3	"	"	"	800	"	"	900
5	"	"	"	900	"	"	1,000
3	"	"	"	1,000	"	"	1,100
2	"	"	"	1,100	"	"	1,200
2	"	"	"	1,200	"	"	1,300
4	"	"	"	1,300	"	"	1,400
3	"	"	"	1,400	"	"	1,500

The incomes of sixteen Registrars were over $1,500, but, under $2,000, as follows:—

4	had	incomes	over	$1,500	and	under	$1,600
1	"	"	"	1,600	"	"	1,700
3	"	"	"	1,700	"	"	1,800
2	"	"	"	1,800	"	"	1,900
6	"	"	"	1,900	"	"	2,000

The incomes of ten were over $2,000 but less than $2,600 as follows:—

2	had incomes	over	$2,000	and	under	$2,100
2	"	"	2,100	"	"	2,200
1	"	"	2,200	"	"	2,300
1	"	"	2,300	"	"	2,400
2	"	"	2,400	"	"	2,500
2	"	"	2,500	"	"	2,600

The incomes of the remaining six were:—

$2,715 00
2,773 82
3,580 77
3,674 10
3,881 40
4,257 94

Their duties I found to be generally well performed and the Offices in charge of capable and competent Officers. It has been necessary, however, in a few cases to direct attention to the requirements of the Statutes, more especially with regard to copying and comparing, which in some instances were considerably in arrears. The arrears at the end of the year are shown in the Schedules above referred to.

Prompt attention had not always been given to the verification by Statutory declaration of the copies made in completed Registry Books as required by Section 52 (3). Some declarations were not signed by the copying Clerk, nor, in one instance, by the Commissioner.

Some had not the books required by the *Custody of Documents Act,* R.S.O. cap. 125, and in two offices entries had not been made in these books.

Instruments should be abstracted and entries made in the Alphabetical Index on the day they are received or immediately on the following morning; the practice of leaving the indexing until after the instrument has been copied and compared should be discontinued.

Quite a number of Registrars had not received copies of the Statutes for 1916, with the result that the requirements of the amending Statute, 6 Geo. V, Cap. 24, Secs. 20 and 21, had not been complied with. Entries have since been made in the Registry Books and Abstract Indexes as required by this Statute, of all documents registered or deposited since the date of the passing thereof.

Some had not a Miscellaneous Index for the entry of documents required to be registered by various Statutes, and which do not affect lands.

Entries were in some cases made in the By-law books of By-laws affecting streets, lanes, or other highways. Such By-laws should be abstracted and copied, as are other instruments affecting lands. The By-law book is intended for Money By-laws only.

Only such Instruments as are mentioned in Subsection 8 of Section 23 of the *Registry Act*, and amending Statute 5 Geo. V, Cap. 20, Sec. 13, may now be entered in the General Register. I found in several instances that documents had been entered in this book instead of in a Miscellaneous Index.

Ten offices were without proper Index Books for Plans, and I found a lack of uniformity in these books. In some cases particulars of the plans were kept on cardboard sheets or in little pass books. I am taking steps for the preparation of a proper uniform Plans Index Book.

Where the consent of a Municipality is required under the *Municipal Act* it should be written on the plan, and not merely on a sheet of paper annexed

thereto, as there is always danger of this paper being torn during the frequent use of the plan.

The dates and other particulars in the body of an instrument and not those endorsed on the back, are to be inserted in the Abstract Index. In some cases where these did not agree, I have found errors on the abstract.

The Report of the Inspector of Registry Offices for the year 1914 contained the following statement:—

"The system of heating and of ventilation of vaults in some of the Registry Offices are still antiquated and insufficient. There is also a serious lack of accommodation for the Registrar and his staff and for the transaction of business in several of the offices."

This statement is still applicable. In one case in particular there is great danger to documents should the buildings adjoining the Registry Office take fire. In view of the damage to the Court House in Peterborough a few months ago, consequent upon the burning of a building several hundred yards away, I am satisfied of the damage that would occur by reason of fire entering through the windows of the Registry Office in question, should the buildings adjoining it take fire. Though the Authorities of the Municipality have been notified nothing has as yet been done towards the erection of a properly equipped fireproof and sanitary Registry Office, as required by Sec. 8 of the *Registry Act.*

In some offices no attention whatever appears to have been paid to the matter of sweeping or dusting, as the walls, books, floors and shelving give ample evidence. Such lack of care for property on the part of the Municipal Authorities is very much to be regretted.

The usual number of questions for my decision or opinion have been submitted during the year. Annexed to this report are notes of such decisions or opinions as seem to be of interest to the Registrars and others who have business in the Registry Offices.

At the request of the Honourable the Provincial Treasurer I furnished a certified list of the Registrars of Deeds, and of the amount of security which each should furnish under Section 11 of the *Registry Act,* and the Order-in-Council passed thereunder. Except in the cases mentioned in subsection 2 of that section the amount was arrived at by computing the average of the gross fees for the previous three years.

I have the honour to be, Sir,

Your obedient servant,

JAS. W. MALLON.

Inspector.

Osgoode Hall, Toronto, March 21st, 1917.

NOTES OF DECISIONS AND OPINIONS

By JAMES W. MALLON

THE FEES FOR REGISTERING A CERTIFICATE OF DISCHARGE OF MORTGAGE ARE THOSE PROVIDED IN CLAUSE (*p*) OF SECTION 92 OF THE REGISTRY ACT; AND THE FEE OF TEN CENTS PROVIDED BY CLAUSE (*o*) MAY NOT BE CHARGED IN ADDITION.

A difference has arisen between members of the Law Association and the Registrar of the County of S., which has been referred under Section 96 of the *Registry Act* for my decision.

It appears the Registrar recently instituted a practise of charging for the registration of every Certificate of Discharge of Mortgage, a fee of ten cents for the production of the registered mortgage, in addition to the fees provided by Sec. 92, clause (*p*) of the Statute.

The Registrar says that very many Discharges submitted for registration do not fully comply with the *Registry Act,* or do not correctly set out the necessary particulars required by that Act, and contends that this fee of ten cents errs only in the smallness of the amount, and does not fairly pay for the work involved.

The solicitor for the Law Association contends that the matter is concluded by Sec. 92, clause (*p*), and by a ruling of the late Inspector, contained in the Report of the Inspector of Registry Offices for the year 1897, at page 17.

In the case referred to in that report the Registrar took the view that where the discharge was of a mortgage not registered in full, he had to refer to the mortgage to ascertain what lands were affected, in order to make entries in the proper books; but the Inspector held that Sub.-sec. 10 of Sec. 111 of the then *Registry Act* provided a fixed fee for registration of the Certificate, that the Registrar must do what is necessary for that fee to enable him to make the necessary entries in the Abstract Index, and that Sub.-sec. 9 of said Sec. 111, which provided a fee of ten cents for exhibiting in the office each original registered instrument, including search for same, did not apply to a Registrar looking at an original registered mortgage for the purposes referred to.

The Registrar further states he has no doubt that had anyone seen fit to interest himself the late Inspector would, with his mature knowledge, have given a different opinion from that expressed some twenty years ago; but I find that in 1906 he still adhered to his previously expressed opinion, for in his report for that year, at page 16, amongst other things Mr. Guthrie said: "I think 50 cents is a sufficient fee for registration of the Discharge."

The sub-sections of the Registry Act referred to by the late Inspector are now clauses (*o*) and (*p*) of Section 92 of R.S.O., chapter 124, the present *Registry Act,* and my view is that a Certificate of Discharge of Mortgage must be registered for the fees set out in Section 92, clause (*p*), and that the ten cents fee provided by clause (*o*) may not be charged in addition.

I therefore decide the dispute in favour of the Law Association.

BY-LAWS RELATING TO STREETS OR OTHER HIGHWAYS ARE NOT ENTERED IN THE MISCELLANEOUS INDEX NOR IN THE BY-LAW BOOK. THEY ARE ENTERED IN THE ABSTRACT INDEXES AND REGISTRY BOOKS FOR THE LANDS WHICH THEY AFFECT. THE BY-LAW BOOK IS RESERVED FOR MONEY BY-LAWS ONLY.

To a Registrar of Deeds:

You wrote some little time ago for a Miscellaneous Index in which to enter By-laws for the opening of streets, roads and lanes.

These By-laws are not entered in the Miscellaneous Index nor in the By-law Book. They are treated as Instruments and entered in the Abstract Index and in the Registry books for the lands which they affect. The By-law book is reserved for money by-laws only.

A DISCHARGE OF MORTGAGE EXECUTED MAY 1ST, 1882, MAY BE REGISTERED WITHOUT A RECITAL OF THE PARTICULARS REQUIRED BY SECTION 65, SUBSECTION 2, OF THE REGISTRY ACT.

To a Registrar:

Herewith by registered post I beg to return the Discharge of Mortgage B. to D.

You may register this discharge. It is dated May 1st, 1882, and apparently executed that day, as the jurat to the affidavit of execution is dated May 1st, 1882.

It was not until April 1st, 1899, when the Statute 62 Vic. (2nd Sess.) Cap. 15, Sec. 7, came into force that it became necessary to set forth in the Certificate of Discharge particulars of the instruments through which the person executing the discharge claims interest in or title to the mortgage moneys.

REGISTRARS MUST CONFORM TO STANDARD TIME AS DEFINED BY R.S.O. CHAPTER 132, AND NOT TO THAT PROVIDED IN LOCAL DAYLIGHT SAVING BY-LAWS.

To a Registrar:

I have your letter of the 9th inst. enclosing copy of the Proclamation of the Acting Mayor whereby time in the City of G. is to be advanced one hour and you ask if, in your office, you should conform to this change.

My reply is that you should not, as I am not aware of any Statute at variance with the provisions of R.S.O., chapter 132, under which Standard Time governs.

METHOD OF REGISTERING A CONVEYANCE OF SEVERAL PARCELS OF LAND, THE DESCRIPTION OF ONE OF WHICH IS DOUBTFUL.

To a Registrar:

I am in receipt of a letter from Messrs. I. & M., with copies of the description of two parcels in a conveyance which they say you refuse to register.

Following the opinion expressed at page 40 of my report for 1915, a copy of which I forward under separate cover, I think you may register the deed and mortgage, especially as I am not quite sure that a surveyor would not be able to locate the parcel from the stump fence said to be the northerly boundary.

You will, of course, make special mention of the doubtful description in the column for remarks in the Abstract Index.

THE GUARDIAN OF THE HEIRS-AT-LAW AND NEXT OF KIN OF A DECEASED MORTGAGEE IS NOT COMPETENT TO SIGN A VALID CERTIFICATE OF DISCHARGE OF MORTGAGE.

To a Registrar:

Herewith I beg to return by registered post the Certificate of Discharge T. G. G. to A. C. E., also the letter of Messrs. R. & B., solicitors.

The discharge is executed by Thomas G. G, who is described as the lawful Guardian of V. P. and M. P., the only heirs-at-law and next of kin of M. J. P., widow, deceased, the Mortgagee; and it contains recitals that letters of Guardianship appointing Thomas G. G., guardian of their persons and properties are registered in the Registry Office, also that as such guardian he received the Mortgage Moneys from the Mortgagor.

The Certificate of Discharge is a creature of the *Registry Act* and must follow the requirements of that Statute, in order to have the effect and operation contemplated by Section 67, namely, of a release and re-conveyance; and Section 62 provides by whom the Certificate shall be executed, namely, by the Mortgagee, or her executors, administrators or assigns.

I am therefore of opinion that this Certificate of Discharge is not sufficient. However, a difficulty of this kind is often overcome by the registration of a release and re-conveyance.

BY-LAW OF A SCHOOL SECTION IN AN UNORGANIZED TOWNSHIP. SUGGESTIONS AS TO FORM.

To a Registrar:

Re School Sec. No. 2, M. and L.

On my return to the City I have your letter of the 22nd inst. with what purports to be a Money By-law of School Sec. 2 of the Unorganized Townships of M. and L.

I may say that a representative of Messrs. M., M. and L. called on me to-day and stated that his firm had instructions from the Sec.-Treas. of this School Section to prepare a By-law for the Trustees in proper form and in lieu of this one.

In view of this I am returning by registered post herewith the documents you sent me.

If the By-law is not prepared in duplicate it will be necessary to have attached to the copy to be left with you the Certificate of the Clerk, under his hand and the seal of the School Section that it is a true copy. I think also there should be a Schedule to the By-law setting forth the annual payments of principal and interest.

THE SIGNATURE OF A SURVEYOR TO HIS CERTIFICATE ON A PLAN NEED NOT BE VERIFIED BY AFFIDAVIT.

To a Registrar:

Replying to your letter of the 7th inst.. I may say that I do not think the Act requires that the signature of the Surveyor to his Certificate on a Plan should be verified by affidavit. I think Sec. 81, sub-sec. 13, refers to the signature of the owner.

WHEN NOTICE OF SEIZURE BY A SHERIFF OF A MORTGAGE HAS BEEN REGISTERED PURSUANT TO SECTION 25 OF THE EXECUTION ACT, A DISCHARGE OF SUCH MORTGAGE, OTHER THAN THAT CONTAINED IN FORM 11 OF THE REGISTRY ACT, MAY NOT BE ACCEPTED FOR REGISTRATION UNTIL A CERTIFICATE OR ORDER UNDER SECTION 28 OF THE EXECUTION ACT HAS BEEN REGISTERED.

To a Deputy Registrar:

On my return to the City, I have your letter of the 1st instant.

You state that by a Mortgage dated July 20th, 1915, and registered July 26th, 1915, John R. mortgaged certain lands to Joseph L.; that by an Indenture dated and registered 11th September, 1915, the Sheriff of N. gave notice that he had seized this Mortgage; that by an Assignment dated July 20th, 1915, and registered November 3rd, 1915, Joseph L. assigned the Mortgage to R. J.; that there is now tendered to you for registration a discharge of the said Mortgage by R. J., which properly recites the Mortgage and the assignment but does not mention the registered Notice of Seizure by the Sheriff, and you ask if it is proper to register this discharge.

The Notice of Seizure was registered pursuant to Section 25 of the Execution Act, R.S.O. cap. 80, and unless a certificate or order has been registered pursuant to Section 28 of that Statute, or a Certificate, Form 11, pursuant to Section 63 of the *Registry Act*, it would not be proper to accept for registration the Discharge of Mortgage in question.

ERROR IN AN INSTRUMENT DISCOVERED AFTER REGISTRATION, MAY NOT BE CORRECTED BY ALTERATION OF THE DOCUMENT. RECTIFICATION DEED SUGGESTED.

To a Registrar:

An undated letter was received from you on the 11th inst. during my absence.

It states that you received on July 30th a deed for registration, and by the next mail, but after registration had been completed, you received from the solicitor a letter which stated that there was an error in the description, which he requested you to amend.

Under Sec. 80 of the Act an instrument is deemed to be registered when received, and thereafter no alteration shall be made in it.

You ask for suggestions. The registration of a new deed of rectification should clear the title.

AFFIDAVITS OF EXECUTION MADE BEFORE JUSTICES OF THE PEACE IN ANY OF THE PROVINCES OF CANADA ARE SUFFICIENT FOR REGISTRATION PURPOSES. AFFIDAVITS OF EXECUTION SWORN BEFORE A COMMISSIONER OF THE SUPERIOR COURT FOR TAKING AFFIDAVITS IN QUEBEC ARE SUFFICIENT FOR REGISTRATION PURPOSES.

To a Land and Tax Commissioner:

On my return to the City I have your letter of the 11th inst.

In reply I may say that as long as the law remains as it is I shall follow the rulings of the late Mr. Guthrie as expressed at page 26 of his Report for the year 1914, and page 23 of my Report, 1915, in the event of there being referred to me the question whether or not affidavits taken before Justices of the Peace in the Province of Quebec or Commissioners of the Supreme Court for taking affidavits in that Province may be accepted as sufficient for registration purposes.

REQUISITION UNDER THE CUSTODY OF DOCUMENTS ACT—FORM OF—NO ADDITIONAL FEES FOR ENTRIES REQUIRED TO BE MADE IN THE ABSTRACT INDEX UNDER SEC. 21 OF THE STATUTE 6 GEO. V. CAP. 24.

To a Registrar:

I beg to return by registered post the affidavit with the copy of notice and Post Office Order thereto annexed and therein referred to and the Requisition for their deposit under the *Custody of Documents Act.*

The affidavit, copy of notice, and Post Office Order, may be treated as one document.

I think the words "Lands described in Instrument No. 9383" sufficient if the particulars of this instrument, i.e., Name of Registry Division, date and

number of the Instrument, and the name of the Township, Village, Town or City where lands are situate, are set out in the Requisition under the proper headings and in the proper columns.

When these particulars have been inserted in the Requisition you may accept the documents for deposit and comply with the provisions of Sec. 21, chapter 24 of the Amending Statute of last Session.

The only fees to which you are entitled are those enumerated in Sec. 7, twenty cents for the Requisition and ten cents for the Document, even though the Memorandum required to be made in the Abstract Index by the Act of last Session will in this case be made under many lots.

AN AMENDMENT TO A PLAN WITHOUT A JUDGE'S ORDER. SUGGESTIONS FOR OWNER'S CERTIFICATE WHERE NAME OF COMPANY CHANGED BY STATUTE.

To a Registrar:

Herewith I return by registered post blue print copy of Plan 20 and the amending plan which it is now proposed to register.

The facts, as I understand them, are as follows: Plan 20 is a sub-division of Park lot 3 bounded on three sides by streets, and on the fourth by the lands of the Department of Railways and Canals; that a strip of the latter lands, adjoining lots 97 to 106 of Plan 20, has been acquired by the owners of the lands sub-divided by Plan 20 for the purpose of adding to the depth of these lots which by the new plan are re-divided; that the re-division will not affect any of the streets shown on Plan 20, which plan was fyled with the consent of the Municipal Council and the approval of the Ontario Railway and Municipal Board; that none of the lots on Plan 20 have been sold or dealt with in any way; and that no person or public body is in any way concerned in the re-dividing, extending or laying out of these lots, or laying out other or different lots, except the owners who caused Plan 20 to be made and registered, and who are now desirous of re-dividing and deepening their lots. Under these circumstances I am of opinion that a Judge's Order under Sec. 86 of the *Registry Act* is not necessary.

As to your further difficulty, namely, that the lands on Plan 20 are shown by your books as the property of the Title and Trust Company, while the new plan is presented by the Chartered Trust and Executor Company, I may refer you to Dominion Statute, 5 Geo. V, Vols. 1 and 2, chapter 70, which changes the name of the Title and Trusts Company to Chartered Trust and Executor Company. Before the new plan is registered I think there should be added to the owner's certificate thereon the words "Formerly the Title and Trusts Company, See 5 Geo. V, Vols. 1 and 2, chapter 70."

ALTERATIONS OR CORRECTIONS IN AN ABSTRACT INDEX. REGISTRAR'S RESPONSIBILITY. SUGGESTIONS TO AVOID AN ALTERATION.

To a Registrar:

The facts as stated in your letter, as I understand them, are as follows: in December, 1896, a Mortgage was registered of a parcel of land described by metes and bounds as being in the Township of East F., the description concluding: "being lots 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20 Ordinance Survey" and followed by a reservation of certain parts of these lots; that while there is an apparent discrepancy in the particular and general descriptions for the reason that the lots in the Ordinance Survey could hardly be in the Township of East F., although it immediately adjoins, yet owing to the uncertainty of their position, the plan not showing the Township lot boundaries, and with the definite reference to these lots you abstracted the Mortgage against each of them, the Mortgagors then being the owners; that the Mortgage was subsequently discharged as to the lots in the Ordinance Survey and in May, 1911, a grant was registered; that this grant contained the particular description as in the Mortgage but omitted the further reference to the Ordinance lots and the exception. This grant you entered against the Ordinance lots with the addition in red ink. "?See if affects." "See Instrument," and "See 6424 E. F." this latter being the registered number of the Mortgage. You are now asked to remove this from the abstract of lots 9 to 20 Ordinance Survey and to delete all reference thereto, and to request my approval to your so doing.

I may have authority under clause (*h*) of Section 112 of the *Registry Act* to direct a Registrar to amend or correct in the Abstract Index the entries referred to, but from the facts before me I am unable to determine whether or not the description does or does not in fact affect any part of the Ordinance Survey lots.

The responsibility is yours, and while I think for your own protection you were justified in making the entries you did, yet if satisfactory proof is adduced to you that the description as a fact does not include or affect any part of these lots then I see no reason why you should not correct the Abstract in the manner provided by Sec. 79. The responsibility, however, is yours.

If the description can be shown by Surveyor's Certificate not to include these lots such certificate could be deposited under *The Custody of Documents Act* and a note of such deposit, pursuant to Sec. 21 of 6 Geo. V, chapter 24, made on the Abstract Index of the lots. This, however, I offer as a suggestion and as a means of avoiding a change in the Abstract.

A DESCRIPTION BY REFERENCE—SUGGESTIONS AS TO FORM OF.

To a Firm of Solicitors:

A question similar to that submitted in your letter of the 16th inst. was dealt with in the Report of the Inspector of Registry Offices for the year 1914 at page 16.

If to the descriptions of each excepted parcel are added the words "more fully described in the conveyance from — to — (giving names of Grantor and Grantee) dated the — day of —, and registered the — day of —, as Number —." I think the Registrar may accept the Instrument for registration.

I am sending a copy of this letter to the Registrar.

WHERE LANDS MENTIONED IN WILL HAVE BEEN DISPOSED OF BY TESTATOR IN HIS LIFETIME THE WILL MAY BE ENTERED IN THE GENERAL REGISTER, BUT SHOULD ALSO BE ENTERED AGAINST THE LANDS.

To a Registrar:

I have your letter of the 23rd inst.

Your difficulty appears to be as follows: A Will containing a devise of a village lot is tendered for registration with the request that it be not abstracted against the lot, but entered in the General Register only, as the lot had been sold and conveyed by Testator in his lifetime.

The former *Registry Act,* Sec. 70, sub.-sec. 2, provided that where the copy of the Will has attached an affidavit by the executor to the effect that after making the Will the Testator conveyed lands in the Will described by local description, and that it was not intended or desired that the registration of the Will shall affect such lands, and if, in addition it appears by registered entries respecting such lands that Testator had parted with all his interest in or title to said lands, the Registrar shall not register, copy or enter the Will as an instrument affecting such lands. But on the revision of the *Registry Act* in the year 1910, this section was left out, and it is not in the present *Registry Act.* R.S.O. 1914, cap. 124.

In his report for the year 1913 at page 23 the late Inspector was of opinion that a Will may be registered in short form in the General Register, under Sec. 65, subsections 4 and 5, where the executor makes affidavit that the Will does not affect land in the Registry Division except in regard to Mortgages, notwithstanding that the Will devises land in the Registry Division by particular description, which land the Testator had disposed of after making his Will.

As the Will in the present instance is less than seven folios in length it cannot be registered under that section. I am of opinion, however, that it will suffice to enter this Will in the General Register, but I think that you should also make a note of the registered number and other particulars of the Will in the Abstract Index of the village lot with the words "Does it affect?" a practice I find to obtain in other offices.

NOTE:—Since giving the above opinion I have observed the following statement at page 7 of the Report of the Inspector of Registry Offices for the year 1911.

"Wills are not infrequently made years before the Testator's death and affect property which, in the interval between the making of the Will and his death, the Testator had disposed of, thereby revoking the devise of the property made by the Will; and yet as the law now stands the Will has to be entered against such land."

PROPER METHOD OF REGISTERING A JUDGE'S ORDER MADE IN PURSUANCE OF SECTION 449 OF THE MUNICIPAL ACT, AND WHICH DECLARES A BRIDGE TO BE A COUNTY BRIDGE.

To a Registrar:

The question submitted for my opinion is as to the proper method of registering a Judge's Order made in pursuance of Sec. 449 of *The Municipal Act,* and which declares a certain bridge to be a County bridge.

Sub.-sec. 6 of Sec. 449 provides that it shall be registered in the Registry Office of the Registry Division in which the bridge is situate, and your contention is that the method of registering the Order should be that provided for by Section 43 of the *Registry Act;* that a Certificate of the Clerk of the County Court, and not the Order itself, should be registered.

The Solicitors on the other hand contend that the order is not one affecting lands but one affecting highways, and therefor feel they would not be safe in simply fyling a certificate as provided by Sec. 43.

The question, I find, has been dealt with in the reports of the Inspector of Registry Offices for the year 1910 at page 23, and for 1904 at page 19, and I agree with the opinion therein expressed, as the law is the same now as it was at the time these reports were made.

In his report for 1910, referring to Sec. 617 (*a*) of the then *Municipal Act,* Mr. Guthrie said: "I think this clause does not contemplate registration of the Judge's Order as necessary to affect any particular lot of land. Registration seems to be required as a matter of convenience, so that the Order may be on public record and thus be preserved, and be available for reference as to its contents;" and he states that if the order is registered "in the book for the Township concerned, that is in the Book in which you copy instruments" all is done that is necessary to carry out the provisions of the *Municipal Act* in respect of the registration of the order.

In his report for 1904, Mr. Guthrie said, "Some Registrars keep at the end of the Alphabetical Index for Townships a page headed "Miscellaneous" and probably the better way will be for you to enter the order in the Book for West X, and open a page for "Miscellaneous" at the end of the Abstract Index for that Township, and note the order there."

Having regard to the views of the late Inspector I think this order need only be copied into the Township Registers, and entered in the Miscellaneous Index, if you have one, and if not, you may open pages headed "Miscellaneous" at the end of the Alphabetical and Abstract Indexes of the Townships on or near the dividing line of which the bridge in question stands.

EX PARTE OPINIONS NOT GIVEN ON QUESTIONS OF DISPUTED FEES.

To a Registrar:

Your letter was received during my absence from the City on duty.

You do not give the name of the Registrar who has made the charges complained of.

In view of Sec. 96 of the *Registry Act* I do not think that I should give an *ex parte* opinion on a question of disputed fees. I would suggest, however, that you write the Registrar enclosing a copy of your letter to me and say that it is my desire that he write to me in the matter.

Meantime I may refer you to the Report of the Inspector of Registry Offices for the year 1897, page 17.

Please also send the Registrar a copy of this letter.

A DESCRIPTION WHICH DOES NOT COMPLY WITH THE REGISTRY ACT. SUGGESTED AMENDMENTS.

To a Registrar:

I return herewith the deed S. S. to the H. E. P. C., the description in which is as follows: "parts of lot Number Nineteen (19) in the Thirteenth concession of the said Township of H., containing by admeasurement in all about eight and ninety-four one hundredths acres (8.94. ac) be the same more or less, and more particularly shown on plan hereto attached colored red" and containing the following: "It is hereby understood and agreed that the said lands *will be covered with water,* and it is further understood and agreed that this agreement covers any and all damages of any and every kind that may arise from or affect the said lot from the rising of the waters of R. Lake, by means of a storage dam *to be constructed* on lot Number 8 in the Thirteenth Concession of the Township of H., to a level which will be controlled by a bench-mark being approximately six (6) feet above the low water level of R. Lake as established in the month of March of the year 1911."

The plan referred to and which constitutes a part of the Instrument, is a blue print sketch of lot 19 and adjoining lots with what appears to be a creek or stream colored red meandering across the northerly portion of the lot. This sketch bears no measurements whatever. The course of the stream is not indicated and the dimensions of the land conveyed are not marked, and there are no measurements to show its location with regard to adjacent lands in lot 19.

The parcel conveyed is to be covered with water and possibly portions of the adjacent lands will be flooded when the dam referred to has been constructed.

It is quite evident, therefore, that a surveyor going upon the ground would be unable to locate the parcel either from the description or the blue print sketch.

If the course of the centre line of the stream, with the dimensions of the lands on either side thereof intended to be conveyed, were indicated on the sketch, I think you might accept this deed for registration, or a Statutory Declaration of the Grantees or an officer of theirs pursuant to Section 34 may be attached to the deed, in which case it would not be necessary to have the same re-executed.

FEES FOR REGISTERING IN FULL A MORTGAGE CONTAINING 1,200 WORDS AND EMBRACING LANDS IN TWO MUNICIPALITIES.

To a Registrar:

Your letter was received during my absence from the City on duty.

You ask for my opinion "in a friendly way" as to the fees for registering in full a Mortgage containing 1,200 words and covering lands in two Municipalities in your Registry Division.

While it is not my practice to give *ex parte* opinions on questions of fees, yet in order to help you, and on the understanding that I may change my opinion in the event of a dispute, and after I have heard from both sides, I may say that my present view is that the fees should be computed having regard to the "aggregate copying," under the last two clauses of Section 92 (*b*), in which case they would be, not $4.30 as you suppose, but $3.45, as follows:

$1.40 for the first 700 words.
$1.05 for the second 700 words.
$1.00 for the remaining 1,000 words.

$3.45

I am assuming, of course, that the instrument covers not more than four lots or parcels in each municipality.

AFFIDAVIT OF EXECUTION SWORN IN THE FIELD IN FRANCE BEFORE A "CAPTAIN DEPUTY ASSISTANT ADJUTANT GENERAL" NOT SUFFICIENT FOR REGISTRATION PURPOSES. JUDGE'S ORDER UNDER SEC. 41 SUGGESTED. AFFIDAVIT SWORN BEFORE A COMMISSIONER FOR TAKING AFFIDAVITS FOR USE IN THE SUPREME COURT OF JUDICATURE IN ENGLAND IS SUFFICIENT.

To a Registrar:

Herewith I beg to return by registered post the deed R. to S., attached to which is an affidavit of execution "Sworn in the Field in France before R. P. S., Capt. Deputy Assistant Adjutant General, British Army Service in France, a Commissioner for Oaths."

As Captain, Mr. S. would not be authorized by the Act of last Session (6 Geo. V, cap. 24, Sec. 13) to take this affidavit, but you will observe in the jurat he is also styled "A Commissioner for Oaths."

If he is a Commissioner for taking affidavits for use in the Supreme Court of Judicature in England the affidavit is sufficient and without his Certificate that he has not an official seal—see Inspector's Report, 1913, page 26.

To remove any doubt, however, I would suggest a Judge's Order pursuant to Sec. 41 of the *Registry Act* which will enable you to accept this Instrument for registration.

THE "CERTIFIED COPY" REFERRED TO IN SECTION 55 OF THE PUBLIC LANDS ACT IS A COPY CERTIFIED BY THE MINISTER OF LANDS, FORESTS AND MINES, AND NOT MERELY AN OFFICE COPY VERIFIED BY AFFIDAVIT.

To Solicitors:

Your letter received during my absence I beg to acknowledge.

You desire to register an order of the Minister of Lands, Forests and Mines, made in pursuance of Sec. 55 of *The Public Lands Act,* R.S.O., cap. 28, which section provides that "the order or a certified copy of it shall be registered in the proper Registry Office," etc.; and as you wish to retain the original for deposit with the owners of the lands affected, you submit that the order be registered by the deposit of a copy verified to be a true copy by affidavit attached.

In my opinion this may not be done, the original must be left in the Registry Office. A copy so verified by affidavit is not a certified copy. A certified copy is a copy authorized to be certified, as for example, the copy referred to in Section 44 or Section 22 of the *Registry Act,* and possibly the copy referred to in Sec. 55 of the Statute in question, namely a copy Certified by the Minister of Lands, Forests and Mines.

WHEN AN INSTRUMENT AFFECTING LANDS IN A PROVISIONAL JUDICIAL DISTRICT, IS TENDERED FOR REGISTRATION AND THE LETTERS PATENT UNDER WHICH THE SAME WERE GRANTED HAVE NOT BEEN REGISTERED, PROOF TO THE SATISFACTION OF THE REGISTRAR SHOULD BE FURNISHED THAT THE LETTERS WERE NOT ISSUED SINCE DECEMBER, 31ST, 1887. AN EXEMPLIFICATION THE BEST POSSIBLE PROOF.

To a Firm of Solicitors:

Your letter addressed to the late Mr. Guthrie was received here in my absence from the City.

I now return by registered post the deed and other documents that were enclosed with it.

I understand the position to be as follows: When it was explained to the Registrar that Sec. 4 of the *Registry Act* does not prohibit the registration of this deed because the Letters Patent, though unregistered, were issued prior to Dec. 31st, 1887, and the lands are not among those mentioned in subsection 2 of Section 159 of the *Land Titles Act,* the Registrar requested proof that a patent had been granted prior to that date. As proof you submit copy of a description contained in the Notice of a Patent dated Dec. 2nd, 1886, of a triangular parcel which adjoins the lands of which the lands in question formed a part. It refers to the lands as having been "deeded from the Crown to Richard H.." but does not give the date. This you think establishes the fact that the Patent was so granted prior to Dec. 31st, 1887.

I do not think this reference to a patent sufficient proof to enable the Registrar to determine whether or not he should accept this deed for registration.

The facts can readily be obtained from the Crown Lands Department and the Registrar was within his rights in asking for proof other than that suggested.

Possibly a Certificate from the proper officer of the Department would suffice but I would suggest as the best possible proof the registration of an exemplification under Section 54 of the *Registry Act.*

As to the sufficiency of the description for registration purposes see my report for 1915, page 40.

COPY OF A REGISTERED PLAN MADE IN THE REGISTRY OFFICE BY PERSON WHO DESIRES SAME MAY BE CHARGED FOR. FEES TO BE CHARGED FOR COPIES OF PLANS.

To a Deputy Registrar:

A Registrar is entitled to charge for copy of a registered plan whether made by the Registrar or by the party who desires the copy.

In the absence of any provision as to fees in the Statute under which the plan has been registered, or, if it is one registered under the *Registry Act,* then, as the latter Statute is silent as to fees for copies of registered plans, Sec. 93 governs, and the Registrar may charge, in addition to the ten cents for production and 25 cents for Certificate where one is asked for, such a sum as the Inspector would deem to be reasonable, having regard to the circumstances of each particular case, and to the work involved in comparing, etc.

If the plan is one deposited under the *Dominion Railway Act* then the fees provided by Section 163 of that Statute as defined by the late Inspector in his report for 1906, page 7, will be the proper fees to charge.

I would suggest that in the present instance you arrange with the solicitor as to the proper fees to charge for the copy required, and if you cannot agree the question as to what sum is reasonable may be referred to me.

THE ASSIGNS OF THE ADMINISTRATOR OF THE ESTATE OF A MORTGAGEE'S RESIDUARY LEGATEE ARE NOT COMPETENT TO EXECUTE A VALID CERTIFICATE OF DISCHARGE OF MORTGAGE.

To a Registrar:

You state that a Discharge of Mortgage has been presented for registration by a solicitor and that you have mutually agreed to ask my opinion on the following facts:

In 1882 Walter W. mortgaged to M. D.

In 1894 probate was granted of the will of M. D. wherein he bequeathed $800 to a neice, gave the residue of his estate, real and personal, to his sister Julia McD. whom he appointed his sole executrix.

Julia McD. died intestate, and on Dec. 13th, 1901, Letters of Administration of her estate were granted to D. J. McD.

On Dec. 23rd, 1901, he, as administrator of the estate of Julia McD., assigned the Mortgage to Gertrude L. McD. and Ida M. McD., daughters of said Julia McD. and sisters of the Assignor.

It may be that the persons who have executed this discharge are the parties virtually entitled to the Mortgage moneys, but I do not think they are the persons who may sign a Statutory Certificate of Discharge of Mortgage.

Such Certificate must follow the requirements of Section 62 of the *Registry Act* in order to have the operation and effect contemplated by Section 67, that is, of a release and re-conveyance.

Section 62 requires that the Certificate be executed by the Mortgagee, or his executors, or his administrators or assigns. The Misses McD. are not the assigns of the Mortgagee. They are the assigns of the Administrator of the estate of their mother, the residuary legatee in the Mortgagee's will.

Of course the provisions of Sec. 62 do not apply to a Common Law Release and Re-conveyance under seal.

WHERE A MORTGAGE HAS BEEN REGISTERED BEFORE THE REGISTRATION OF THE PLAN A CERTIFICATE OF FINAL ORDER OF FORECLOSURE OF THE MORTGAGE MUST BE REGISTERED AGAINST THE LAND AS DESCRIBED IN THE MORTGAGE. WHEN IT IS DESIRED TO HAVE IT REGISTERED ALSO AGAINST THE LOTS ON THE PLAN A REFERENCE TO THE PLAN IS SOMETIMES ADDED TO THE DESCRIPTION.

To a Registrar:

You state that you have received for registration a Certificate of Final Order of Foreclosure describing the lands as the same are described in the Mortgage, but excepting therefrom certain of the lots on a Plan of a sub-division of said lands made since the registration of the Mortgage, and which lots were sold and conveyances thereof registered, since the registration of the Mortgage, the plan having endorsed on it the consent of the Mortgagee pursuant to Sec. 81 (16).

You say further that it has been your custom to abstract such Certificates against all of the individual lots on the Plan as well as the lands described in the Mortgage.

While I would like to see an amendment to the *Registry Act* to enable this to be done, or to have the same registered against the lots on the Plan only, I do not think it is permitted by subsection 11 of said Sec. 81.

In some instances, I find that the Solicitors add to the description, a reference to the lots on the Plan, in some such words as the following: "the said above described lands being lots — on Plan number —," giving the lots and plan numbers.

EACH NUMBER, THOUGH COMPOSED OF SEVERAL FIGURES, IS COUNTED AS ONE WORD, AND AN ABBREVIATION IS TREATED AS A WORD.

To a Registrar of Deeds:

Replying to your letter of the 22nd inst, I may say each group of figures in a number is counted as one word. See Sec. 94 of *The Registry Act*. And I understand the practice is to count an abbreviated word as one word.

A DESCRIPTION OF LANDS "THAT MAY BE OVERFLOWED" WHEN THE WATERS OF A LAKE ARE RAISED TO THE HEIGHT OF A STORAGE DAM IS NOT SUFFICIENT. SUGGESTIONS.

To a Village Clerk and Treasurer:

Herewith I beg to return by registered post the deed, which you sent me with your letter of the 30th ult.

The Registry Act requires a local or general description of the land sufficient to enable the same to be traced or ascertained by a surveyor.

The description given is of land "that may be overflowed" when the waters of certain lakes are raised to the height of a certain storage dam. And the sketch annexed to the deed and which may be taken as a part of the Instrument, does not give any measurements.

I do not think a surveyor going upon the ground would be able to locate the lands intended to be conveyed, either from the description in the deed or the sketch referred to.

I would suggest that you see the Registrar of Deeds who may be familiar with the ground, and plans relating thereto, and who no doubt will be in a position to suggest to you a description that will meet with the requirements of the Statute.

A CERTIFICATE OF THE APPOINTMENT OF A COMMITTEE OF A LUNATIC MAY NOT BE ENTERED IN THE GENERAL REGISTER. HOW REGISTERED. PROBABLY NOT NECESSARY TO REGISTER SUCH A CERTIFICATE AS A CONDITION PRECEDENT TO THE REGISTRATION OF A DISCHARGE OF MORTGAGE BY THE COMMITTEE.

To a Barrister:

From your letter it would appear that a Certificate of the Court of the appointment of a Committee of a lunatic was registered in the General Register; that the Deputy Registrar thinks that it should have been entered against the lands, and not in the General Register; that the lunatic was owner of one parcel only of real estate, but had a number of Mortgages that you know of, and that he may have had more. Your letter does not state that the lands are set out in the Certificate.

Your view is that this Certificate is in effect nothing more than a Power of Attorney and is therefore properly registered in the General Register.

I am of opinion that only such Instruments as are mentioned in subsection 8 of Sec. 23 of the *Registry Act,* as amended by 5 Geo. V, cap. 20, sec. 13, may now be entered in the General Register; that the Certificate in question should have been entered against any lands mentioned in the Certificate, and if none are mentioned then in pursuance of Sec. 34, sub.-sec. 1 by annexing a statutory declaration setting out the lands affected.

In view of the ruling of the late Inspector at page 20 of his Report for the year 1913 it is probably not necessary to register this certificate as a condition precedent to the registration by the Committee of any discharges of the Mortgages above referred to.

REGISTRATION OF A DOCUMENT DEPOSITED UNDER THE CUSTODY OF DOCUMENTS ACT—HOW EFFECTED.

From a Barrister:

I wish to get a document registered which is now on deposit under the *Custody of Title Deeds Act,* Chap. 125. The Registrar here, however, feels that I could not register this document until I first obtained it out of his custody, and there seems to be no way of obtaining a document out of the custody of the Registrar except under Sec. 14. Section 14, s.s. 1, only gives the Judge power to deliver up the document when the applicant shows, among other things, "the deposit thereof was made without his consent." I cannot show that the deposit was made without the consent and it would seem, unless you can suggest some way out of the difficulty, that once a document is deposited, there is no way of getting that document subsequently registered, unless you can show that the person who deposited it, deposited it without the consent of the applicant which, of course, in practical affairs, would rarely ever happen.

The circumstances of this case are as follows: On the 28th of April, 1913, a solicitor acting for Dr. D. C. M., deposited a document being a grant from Wm. F. M. and Walter H. M. to Dr. D. C. M., dated 13th October, 1900, of all their interest in the estate of the late H. M. C., the document containing no local description sufficient to register. Dr. M. has sold the property affected by his Grant to my Clients, The B. C. Company, Limited, and to complete the title, we desire to have this document registered and have presented the usual declaration under Sec. 34 of the *Registry Act* to obtain the registration of the document, but as abovementioned, the Registrar takes the ground that he cannot register the instrument until I have first obtained it out of his custody and he cannot permit me to have it out of his custody without the Order under Sec. 14 of the *Custody of Title Deeds Act* and as Dr. M. was the person solely entitled to the possession of the document, and it was deposited with his consent, there appears to be no way of getting the Order. If this is the correct view, it will largely destroy the usefulness of the *Custody of Title Deeds Act* because, as I have said, once a person left a document with the Registrar under this Act, he could neither obtain it back nor have it registered.

Would you kindly let me know if you can help us out in this difficulty.

Letter in reply:

I have your letter of the 20th.

Why not register the duplicate Original Conveyance. If it has not an affidavit of execution attached no doubt you could get a Judge's Order as to its execution.

If the Conveyance is registered in any other Registry Division you might get a certified copy and register it.

It would seem, however, that in view of the opinion expressed at page 25 of the Report of the Inspector of Registry Offices for the year 1899, that if the Conveyance as deposited contains an affidavit of the due execution thereof, it may, at the request of the person who deposited it, be registered, especially as the provisions of Sections 12 and 14 of the present Statute, *The Custody of Documents Act,* R.S.O. 1914, cap. 126, do not differ from those of the corresponding Sections of the then *Custody of Title Deeds Act,* R.S.O. 1897, cap. 137, Sections 13 and 15.

WHERE A CERTIFICATE OF DISCHARGE OF A MORTGAGE HAS BEEN EXECUTED BY THE EXECUTOR OF THE MORTGAGEE, SUCH EXECUTOR HAVING SINCE DIED, AND THE CERTIFICATE DOES NOT COMPLY WITH THE PROVISIONS OF SECTION 65 OF THE REGISTRY ACT—SUGGESTIONS.

To a Registrar:

I now return by registered post the Discharge of Mortgage given by Peter Rufus McL. as "executor of the estate of the late Peter R. McL." to one S.

This Certificate of Discharge makes no reference to the Will and I understand from your letter that no Will has been Registered, and that the executor who signed the Discharge is dead.

You ask if this Certificate of Discharge may be accepted by you for registration if the Will is now registered, and desire that I suggest some way out of the difficulty.

The Certificate of Discharge of Mortgage is a creature of the *Registry Act* and therefore must comply with the requirements of that Statute or it will not operate a re-conveyance of the lands to the Mortgagor.

This Certificate does not comply with Sec. 65 of the Act, and therefore may not be registered as a Discharge of Mortgage.

It seems to me the old common law form of a release and re-conveyance with proper recitals might be secured from those interested in the estate of the Mortgagee.

Of course if this Discharge has attached to it a Statutory Declaration under Sec. 34 it may be registered as an Instrument "without local description." This with the release above referred to ought to satisfy any person afterwards searching title.

ONLY AN ORIGINAL POWER OF ATTORNEY, OR A COPY THEREOF CERTIFIED BY A REGISTRAR, MAY BE REGISTERED. CERTIFIED COPY MEANS COPY AUTHORIZED TO BE CERTIFIED.

To a Deputy Registrar:

Replying to your letter of the 20th inst, I may say that in my opinion only the Original Power of Attorney or a Copy Certified by the Registrar of the Registry Division in which the original has been registered, my be accepted for registration.

Certified copy means copy authorized to be certified, e.g., Secs. 22 or 44. See Report of the Inspector of Registry Offices for the year 1915, page 27.

WHERE AFFIDAVIT OF EXECUTION IS WHOLLY AT VARIANCE WITH THE STATUTORY FORM, REGISTRAR MAY REFUSE IT. AND IF A NEW AFFIDAVIT DIFFICULT TO OBTAIN, A JUDGE MIGHT GRANT AN ORDER UNDER SECTION 41.

To a Deputy Registrar:

I have your letter of the 17th inst. with form of affidavit of execution.

As the affidavit is not at all in the form required by the Act, I think you were justified in refusing it.

I think, however, that if there will be difficulty in obtaining a new affidavit a Judge's Order under Sec. 41 of the Act might be obtained.

PAPERS REQUIRED TO BE LEFT WITH THE REGISTRAR WHEN AN UNPROBATED ORIGINAL WILL IS PRESENTED FOR REGISTRATION.

To a Registrar:

Herewith I return by registered post the Original Will and other documents received with your recent letter.

When you are asked to register an unprobated Will you are to carefully read Subsections 1 (a), 2, 3, and 4 of Section 56 of the *Registry Act*.

The Certificate required by Subsection 4, and the affidavits required by Subsections 1 (a) and 3, must be attached to the copy of Will. These you retain and return the Original Will with Certificate of Registration endorsed thereon.

I have indicated in pencil a change which should be made in the affidavit of the Witness proving execution. There should also be attached the affidavit referred to in Subsection 3, that the testator is dead.

It would be well to have the affidavit of the witness to this Will re-sworn, after the changes therein indicated are made, and after a clause has been added that the testator is dead.

PLANS—PROCEEDINGS UNDER SUBSECTION 13 OF SECTION 88—COSTS—PRELIMINARIES.

To a Barrister:

In this matter I now beg to forward copy of a letter I have written to the Township Clerk.

In the event of a refusal of my request for the registration of a plan under Subsections 1 to 9, and should I then decide to allow my name to be used in proceedings under Subsection 13, of Section 88, following the practice in such matters, I shall expect to be indemnified as to costs.

Should all parties prefer that the matter proceed under the direction of the County Judge pursuant to Subsection 13, rather than Subsection 1, perhaps you can get the Council by resolution to request me to proceed under that Subsection, and to indemnify against costs.

See Reports of the Inspector of Registry Offices, 1907. Page 25; and 1909, page 28.

FORMS WITH DEVIATIONS WHICH DO NOT AFFECT THE SUBSTANCE, AND WHICH ARE NOT CALCULATED TO MISLEAD MAY BE ACCEPTED.

To a Solicitor:

Herewith I beg to return by registered post Statutory Declaration sent me with your letter.

The deviations in this document from the form prescribed by *The Registry Act* seem not to affect the substance, and are not calculated to mislead, and therefore I think the Registrar may accept it; but it should first be amended by the insertion of a clause referring to the registration of the Will—see Subsection (d) of Section 28 of the *Interpretation Act,* and Form 15 of *The Registry Act.*

I would suggest that after the word "Will" in the first line of paragraph 3, there be inserted the words: "which was registered in the Registry Division of the County of ..... on the ..... day of ..... 1917, at .... minutes past ..... o'clock in the ..... noon as number ....."

I am sending a copy of this letter to the Registrar.

OF THE FEES RECEIVED BY HIM FOR THE YEAR A REGISTRAR IS ENTITLED TO RETAIN $1,500. REGISTRAR MAY RETAIN PERCENTAGE IN CERTAIN CASES.

To a Registrar:

Re Your Annual Return.

I have your letter of the 7th inst., and quite agree with your view.

Under Section 101 (1) you are entitled to retain to your own use $1,500.

Where after deducting the percentage payable to the County your income falls below said sum, you may retain out of such percentage a sum sufficient to bring your income up to $1,500.

My report for last year dealt with this question at page 39.

THE AFFIDAVIT REQUIRED BY SECTION 56, SUBSECTION 3.

To a Deputy Registrar:

I have your letter of the 9th with affidavit.

I note it is an affidavit proving execution of the Will by stating that deponent "knew John M., late of the Township of ..... in the County of ....., deceased."

What Subsection 3 of Section 56 requires is a stronger statement than the above, namely a statement that the testator "is dead."

SUBSECTION 5 OF SECTION 88 DOES NOT EMPOWER THE INSPECTOR TO MAKE ANY APPORTIONMENT OF THE COST OF A PLAN OF A POLICE VILLAGE MADE PURSUANT TO SUBSECTION 1 OF SAID SECTION.

To the Solicitor of Police Village

I have your letter of the 15th inst.

As already intimated my view is that the Inspector has no power to make any apportionment of the cost of the plan.

Subsection 5 of Section 88 of the *Registry Act* is clear. It makes it optional with the Township to pay the whole or a part of the costs out of its general funds, or to pay the whole or a part by a special rate to be levied by assessment on the rateable property of the Police Village.

It seems to me a case in which the Trustees and the Council should get together, for I feel as you do the Township should pay some part of the costs.

ITEMS NOT TO BE INCLUDED AS DISBURSEMENTS BY REGISTRARS IN THEIR ANNUAL RETURNS.

To a Registrar

I have your letter of yesterday.

It is thought you should send to the Provincial Secretary a fresh return showing detailed disbursements and omitting therefrom your Income tax and items payable by the County, for Janitor and Stationery.

THE DECLARATION REQUIRED BY SECTION 34 SHOULD BE ATTACHED TO THE COPY LEFT IN THE REGISTRY OFFICE.

To a Deputy Registrar:

Replying to your letter of the 13th inst. I may say that I should think that it will be sufficient if the Statutory Declaration referred to in Section 34 of the Act is attached to the copy registered in your office.

In any cerificate, however. that you will be required to give it would be well to state that the Instrument was registered pursuant to Section 34 of the *Registry Act.*

CERTIFICATES OF DISCHARGE OF MORTGAGE EXECUTED SINCE APRIL 1ST, 1899, MUST SHOW PARTICULARS OF THE INSTRUMENTS THROUGH WHICH THE PERSON EXECUTING THE SAME CLAIMS INTEREST IN OR TITLE TO THE MORTGAGE MONEYS.

To a Deputy Registrar:

Replying to your letter of the 4th inst., I may say that Certificates of Discharge of Mortgage executed since April 1st, 1899, the date when 62 Vic. (2nd Sess.) cap. 15, sec. 7, came into force, must show particulars of the instruments through which the person executing the Discharge claims interest in or title to the Mortgage moneys.

It is the date of execution of the Discharge, not the date of the Mortgage or the assignment thereof, which governs. In my report for last year at page 35, the words "Discharge of" were omitted from the fifth line of the opinion there given. When these words are inserted before the word "Mortgage" in that line you will have a statement of the law in the matter.

APPENDIX

FEES AND EMOLUMENTS received by the Registrars of Deeds for the Province of Ontario for which are contrasted the amount of Fees, Surplus to Municipalities

SCHEDULE A.

No. of Registry Division.	Name of Registry Division.	Name of Registrar.	No. of Municipalities.	Total No. of instruments registered in 1914.	Instruments registered in 1916.			
					Total number.	Fees therefor.	Uncopied.	Copied but uncompared.
			1	1a	2	3	4	5
						$ c.		
1	Algoma	C. F. Farwell	12	2,131	1,725	2,537 12	300	.....
2	Brant	A. Graham	7	2,305	2,619	2,938 45	.....	.....
3	Bruce	W. H. McFarlane	28	1,110	2,989	3,446 89	5	9
4	Carleton	P. J. Coffey	12	3,164	2,662	3,484 10	24	65
5	Dufferin	D. J. Hunter	9	1,209	1,826	1,432 05	.....	.....
6	Dundas	R. J. Dillen	8	1,078	1,036	1,173 35	.....	.....
7	Durham, East	W. H. Scott	5	627	526	709 65	83	.....
8	Durham, West	S. Pollard	5	763	582	631 65	8	.....
9	Elgin	J. H. Coyne	15	3,335	3,150	3,759 15	58	.....
10	Essex	J. O. Reaume	26	7,598	8,892	10,592 55	130	.....
11	Frontenac	W. J. Gibson	18	1,210	1,046	1,341 10	.....	.....
12	Glengarry	J. A. McRae	8	1,719	1,011	1,016 41	.....	.....
13	Grenville	W. S. Johnston	9	976	760	1,063 35	.....	.....
14	Grey, North	R. McKnight	13	2,087	2,040	2,202 65	.....	.....
15	Grey, South	M. K. Richardson	11	1,496	1,573	1,751 70	10	.....
16	Haldimand	P. R. Howard	14	1,680	1,578	1,890 50	.....	.....
17	Haliburton	E. C. Young	10	265	287	361 55	17	.....
18	Halton	V. Chisholm	9	1,753	1,553	1,849 50	204	317
19	Hastings	S. Russell	32	2,788	2,721	3,237 60	233	.....
20	Huron	W. Coats	25	3,328	3,012	3,415 10	.....	.....
21	Kingston	J. P. Gildersleeve	1	978	973	1,151 60	.....	.....
22	Kent	A. J. Dunn	22	4,641	4,619	5,483 95	16	.....
23	Kenora	C. W. Chadwick	1	163	161	197 90	.....	.....
24	Lambton	A. MacLean	21	4,385	3,807	4,479 69	19	10
25	Lanark, North	H. C. Bowland	10	682	669	797 10	.....	.....
26	Lanark, South	J. Armour	9	1,566	1,479	1,336 90	.....	.....
27	Leeds	W. H. Dingle, Deputy Reg. .. J. T. Gallagher	16	1,883	1,894	2,214 50	18	.....
28	Lennox and Addington	G. S. Reid	17	1,183	1,060	1,258 80	118	96
29	Lincoln	C. E. Fisher	14	3,643	3,297	4,250 12	85	.....
30	London	R. H. Dignan	1	2,759	2,564	2,767 30	.....	.....
31	Manitoulin	W. R. Abrey	55	472	456	555 05	16	.....
32	Middlesex, East and North	J. H. Marshall	14	2,605	2,591	3 088 40	.....	.....
33	Middlesex, West	R. Dunlop	9	1,335	960	1,134 65	.....	.....
34	Muskoka	J. E. Lount	27	917	798	1,079 05	17	65
35	Norfolk	W. M. McGuire	13	2,068	1,998	2,416 20	.....	.....
36	Northumberland, East	A. G. Willoughby	9	1,272	1,126	1,959 20	.....	.....
37	Northumberland, West	H. McCullough	5	702	643	809 80	37	.....
38	Nipissing	J. M. Deacon	18	911	733	815 42	.....	.....
39	Ontario	G. W. Dryden	17	2,746	2,532	3,213 09	.....	88
40	Ottawa	J. P. Fisher	1	4,630	3,836	4,490 55	857	782
41	Oxford	G. R. Pattullo	17	3,344	3,282	3,870 20	1,290	.....
42	Parry Sound	Chas. Gillespie	52	845	819	993 60	20	.....
43	Peel	S. Charters	8	1,563	1,704	1,599 35	75	.....
44	Perth, North	James Steele	9	2,428	2,401	2,688 15	15	.....
45	Perth, South	H. F. Sharp	7	892	894	1,083 25	54	3
46	Peterborough	B. Morrow	19	2,031	1,879	2,318 41	.....	.....
47	Prescott	F. W. Thistlethwaite	10	1,565	1,434	1,668 65	100	.....
48	Prince Edward	Walter MacKenzie	10	907	989	1,129 30	243	.....
49	Rainy River	W. J. Keating	12	15	22	33 85	9	.....
50	Renfrew	R. A. Campbell	22	2,314	2,215	2,603 75	6	.....
51	Russell	Jno. A. Gamble	6	1,923	1,649	1,836 10	597	.....
52	Simcoe	J. F. Palling	29	4,712	4,601	5,497 33	70	70
53	Stormont	J. C. Alguire	6	1,247	1,329	1,530 15	.....	.....
54	Sudbury	S. Fournier	29	547	418	505 50	.....	.....
55	Temiskaming	W. H. Lewis	1	48	56	46 00	.....	.....
56	Thunder Bay	J. M. Munro	33	3,561	2,336	2,971 84	.....	.....
57	Toronto, East	Peter Ryan	1	14,363	10,921	11 983 55	169	226
58	Toronto, West	R. H. Bowes	1	14,731	12,543	13,929 20	64	101
59	Victoria	Chas. D. Barr	19	1,413	1,682	2,104 60	1	127
60	Waterloo	J. D. Moore	13	4,515	4,315	5,097 20	.....	.....
61	Welland	J. C. Crow	16	5,028	4,951	5,959 40	2,248	.....
62	Wellington, North	James Tucker	11	1,290	1,320	1,498 46	25	50
63	Wellington, South	Henry Hortop	11	2,147	1,850	2,821 75	.....	.....
64	Wentworth	R. K. Hope	11	8,031	9,471	10,686 95	.....	.....
65	York, East and West	W. J. Hill	15	10,188	6,767	8,760 09	644	.....
66	York, North	J. D. McKay	10	1,554	1,363	1,622 64	21	19

the year 1916, made in accordance with the provisions of R.S.O., 1914, cap. 124, sec. 99, with and Registrars' incomes for the years 1914 and 1915.

SCHEDULE A.

Patents.		Deeds.		Mortgages.		Dis. of Mortgages.		Wills.		Leases.		No. of Registry Division.
No. registered.	Fees for same.	No. registered.	Fees for same.	No. registered.	Fees for same.	No. registered.	Fees for same.	No. registered.	Fees for same.	No. registered.	Fees for same.	
6	7	8	9	10	11	12	13	14	15	16	17	
	$ c.		$ c.		$ c		$ c.		$ c.		$ 5.	
4	11 15	778	1 349 94	325	468 05	332	194 85	53	96 25	.....	.....	1
.....	.....	960	1,459 80	565	575 45	694	393 80	131	232 40	4	9 45	2
1	1 40	1,006	1,546 90	687	702 75	806	456 70	137	282 50	2	4 15	3
.....	.....	1,072	1,714 76	587	607 40	589	464 90	88	182 20	6	14 70	4
.....	.....	415	636 85	267	276 15	333	207 75	72	153 20	1	2 45	5
.....	.....	367	538 45	246	247 90	276	153 15	48	118 40	3	5 95	6
.....	.....	211	348 80	90	93 25	106	67 45	41	85 90	3	8 55	7
.....	.....	226	354 60	100	100 75	113	72 95	45	90 15	1	2 15	8
.....	.....	1,011	1,632 70	759	782 80	804	466 80	126	270 20	102	193 65	9
3	5 15	3,952	5,836 20	2,027	2,088 00	1,700	936 40	145	260 95	22	46 10	10
5	9 40	379	581 50	216	244 50	260	207 20	58	127 45	13	25 20	11
.....	.....	373	412 35	238	238 75	231	126 40	68	116 60	18	32 55	12
.....	.....	288	464 45	180	182 60	221	142 75	65	116 15	3	6 10	13
1	1 40	680	1,014 70	458	469 80	559	304 65	119	258 45	9	15 50	14
1	1 40	537	785 25	358	364 00	441	253 80	80	151 00	4	6 65	15
1	1 70	499	736 60	290	292 30	357	199 40	61	111 75	163	281 65	16
6	10 20	164	243 50	33	35 50	42	23 10	5	8 70	.....	.....	17
.....	.....	509	799 95	462	463 95	401	246 70	79	150 05	2	5 00	18
5	7 00	1,094	1,652 50	588	588 70	590	336 85	118	250 90	27	51 05	19
.....	.....	1,054	1,598 20	644	660 20	844	489 05	213	367 35	2	3 40	20
3	6 00	302	466 30	242	248 65	271	216 15	45	99 55	2	3 85	21
.....	.....	1,446	2,320 70	1,105	1,115 55	1,135	620 25	152	269 85	174	308 90	22
.....	.....	66	92 40	33	33 00	28	14 00	.....	.....	1	1 40	23
1	2 90	1,517	2,226 44	898	930 85	849	566 45	157	272 05	9	22 65	24
.....	.....	233	362 90	137	141 40	167	103 15	48	84 80	.....	.....	25
4	5 60	318	490 60	224	230 70	194	125 05	54	98 95	3	5 10	26
4	6 20	721	1,083 25	404	411 35	459	279 65	125	209 75	10	18 00	27
2	2 80	353	538 40	232	254 75	296	179 85	52	121 65	.....	.....	28
.....	.....	1,446	2,235 44	697	737 59	668	478 00	104	216 95	20	38 10	29
2	3 85	841	1,251 35	627	630 30	651	345 05	118	212 00	3	7 40	30
3	4 35	221	341 25	98	99 70	89	50 65	8	13 15	.....	.....	31
.....	.....	974	1,497 10	519	603 79	617	347 40	160	283 40	101	165 50	32
.....	.....	355	537 85	218	224 50	227	123 90	60	130 25	2	4 70	33
4	7 30	433	685 30	93	101 00	135	80 75	35	90 80	2	4 45	34
1	1 55	807	1,235 15	399	404 85	425	234 15	92	184 30	57	89 15	35
.....	.....	395	646 85	209	212 35	295	191 40	55	103 80	3	5 10	36
.....	.....	227	367 75	130	131 50	148	95 40	36	77 50	3	7 35	37
1	1 40	293	437 57	143	144 90	165	83 50	11	19 30	3	7 15	38
.....	.....	1,016	1,607 78	489	520 03	575	380 33	146	309 85	9	15 15	39
4	1 70	1,086	1,846 80	992	999 00	971	589 90	144	257 45	7	18 85	40
.....	.....	1,145	1,802 70	782	824 10	831	519 05	198	358 90	5	7 60	41
.....	.....	347	542 75	164	181 55	153	87 10	12	23 30	.....	.....	42
.....	.....	441	671 35	329	342 85	349	195 35	82	145 90	3	5 70	43
.....	.....	867	1,291 80	586	604 15	647	387 30	99	178 35	11	19 55	44
.....	.....	316	482 55	199	201 80	227	154 90	63	130 20	2	5 30	45
.....	.....	741	1,141 10	367	388 55	478	301 90	86	218 61	9	21 75	46
.....	.....	414	681 60	404	420 50	407	227 80	56	138 05	.....	.....	47
.....	.....	348	548 25	207	210 40	271	149 45	63	111 90	4	6 20	48
.....	.....	1	1 40	.....	.....	.....	.....	.....	.....	.....	.....	49
5	7 75	854	1,320 50	494	515 05	556	317 15	68	133 80	1	2 55	50
.....	.....	516	758 60	570	610 00	448	271 85	51	110 65	1	1 70	51
13	21 50	1,815	2,782 04	918	954 55	1,122	766 60	208	404 75	10	21 65	52
1	2 00	432	643 50	319	332 50	348	198 30	65	164 15	9	17 75	53
.....	.....	187	277 10	87	92 30	74	39 85	3	4 20	3	9 10	54
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	55
.....	.....	1,154	1,833 69	382	413 35	373	199 60	14	20 55	2	9 70	56
.....	.....	2,996	5,078 25	2,363	2,377 15	2,848	1,615 35	2	5 95	116	314 35	57
.....	.....	3,005	5,070 10	2,483	2,489 20	3,217	1,793 90	470	933 65	26	71 90	58
3	4 50	682	1,033 05	336	352 60	396	254 10	90	208 50	8	20 15	59
1	1 70	1,604	2,626 55	1,025	1,027 65	1,060	615 40	153	313 20	4	8 60	60
.....	.....	2,338	3,524 61	982	1,023 80	961	560 78	157	223 85	38	64 30	61
.....	.....	443	683 36	308	309 90	346	212 75	82	148 95	.....	.....	62
.....	.....	561	929 05	428	450 45	482	312 75	127	237 00	2	5 90	63
.....	.....	3,355	5,129 33	2,209	2,229 78	2,496	1,421 43	259	468 60	17	41 95	64
.....	.....	3,179	5,200 13	1,176	1,212 34	1,260	785 66	167	310 80	.....	.....	65
.....	.....	522	783 75	298	306 45	323	213 99	73	145 90	3	9 50	66

Fees and Emoluments received by the Registrars

Schedule A.—*Continued.*

No. of Registry Division.	Name of Registrar.	Abstracts.		Searches.		Mechanics' Liens.		All other instruments registered.	
		Number.	Fees for same.	Number.	Fees for same.	Number.	Fees for same.	Number.	Fees for same.
		18	19	20	21	22	23	24	25
			$ c.		$ c.		$ c.		$ c.
1	O. F. Farwell	158	160 00	895	341 35	13	3 45	220	413 43
2	Alex. Graham	73	118 85	1,622	425 50	8	2 30	257	265 22
3	Wm. H. McFarlane	756	614 50	770	294 00	1	25	349	452 28
4	P. J. Coffey	284	429 90	1,450	629 95	5	2 50	315	497 64
5	D. J. Hunter	188	248 85	428	165 15	4	1 00	118	154 65
6	R. J. Dillen	28	39 65	208	56 05	2	1 00	94	108 50
7	W. H. Scott	86	159 70	218	136 60	1	25	74	107 45
8	Samuel Pollard	110	143 88	351	142 17	1	50	96	110 55
9	J. H. Coyne	146	262 95	1,913	528 60	8	2 00	340	411 00
10	J. O. Reanme	198	191 60	4,354	1,750 95	60	19 10	983	1,400 65
11	W. J. Gibson	140	177 45	520	256 95	4	1 45	111	134 10
12	J. A. Mc Rae	37	43 75	387	137 87	.....	.....	83	89 75
13	W. S. Johnston	18	59 50	144	68 00	.....	.....	103	151 25
14	R. McKnight	367	329 70	877	229 10	3	1 25	209	236 80
15	M. K. Richardson	278	281 40	393	98 25	2	1 40	150	188 20
16	P. R. Howard	277	269 20	389	269 40	.....	.....	207	267 70
17	E. C. Young	60	57 95	181	44 75	.....	.....	37	40 55
18	Victor Chisholm	272	126 20	781	526 40	11	2 75	89	176 10
19	Samuel Russell	383	693 30	1,911	547 40	1	25	298	350 60
20	W. Coats	723	605 30	1,089	296 50	9	2 75	246	294 15
21	J. P. Gildersleeve	31	48 90	621	261 55	12	3 75	96	107 35
22	Arthur Dunn	225	317 80	1,782	724 98	48	15 05	559	833 65
23	C. W. Chadwick	8	10 85	23	12 05	2	50	32	33 70
24	A. MacLean	159	124 45	1,832	701 87	42	10 80	334	447 55
25	H. C. Bowland	89	68 50	304	89 30	1	25	83	104 55
26	James Armour	89	50 15	477	203 35	.....	.....	116	127 40
27	J. T. Gallagher	79	124 20	1,151	298 10	3	75	168	205 55
28	G. S. Reid	42	126 40	618	172 80	.....	.....	125	161 30
29	C. E. Fisher	510	755 15	1,529	719 25	10	3 60	355	540 44
30	R. H. Dignan	27	70 90	1,083	402 70	27	6 75	295	310 60
31	W. R. Abrey	44	42 85	298	72 40	.....	.....	37	45 65
32	J. H. Marshall	48	74 95	316	103 80	4	1 00	220	255 80
33	Richard Dunlop	136	172 80	324	152 45	.....	.....	98	113 45
34	J. E. Lount	76	74 86	405	176 30	10	3 50	86	105 90
35	W. M. McGuire	127	169 10	1,468	410 80	3	75	214	266 30
36	A. G. Willoughby	288	343 90	170	54 25	1	25	168	295 40
37	H. McCullough	132	215 95	408	120 75	.....	.....	99	130 30
38	J. M. Deacon	85	85 10	658	164 40	21	6 25	96	115 35
39	G. W. Dryden	207	355 40	845	292 75	12	3 00	285	376 95
40	J. P. Fisher	484	436 40	2,754	688 50	69	17 25	613	759 60
41	G. R. Pattullo	406	548 35	1,565	405 65	5	2 25	306	355 60
42	Charles Gillespie	86	112 10	630	226 95	16	6 30	127	154 60
43	Samuel Charters	110	108 10	191	76 45	8	2 00	200	236 20
44	James Steele	195	196 15	865	228 35	9	2 35	182	204 65
45	H. F. Sharp	150	135 10	366	94 70	.....	.....	197	169 60
46	B. Morrow	95	202 25	1,101	526 65	6	1 50	192	245 00
47	F. W. Thistlethwaite	128	231 40	392	200 00	.....	.....	153	200 70
48	Walter MacKenzie	39	50 15	362	139 50	1	50	95	102 60
49	W. J. Keating	.....	.....	.....	.....	.....	.....	21	32 45
50	R. A. Campbell	343	249 35	928	232 00	1	25	236	306 70
51	W. H. Lowrie, S. S. A. Lowrie, Dep., Jno. A. Gamble	323	554 70	366	142 85	.....	.....	63	83 30
52	J. F. Palling	389	659 85	2,413	703 35	12	5 75	403	540 19
53	J. C. Alguire	87	142 45	810	216 00	7	1 75	148	170 20
54	Stephen Fournier	76	69 38	229	91 40	6	1 50	75	81 45
55	W. H. Lewis	.....	.....	.....	.....	.....	.....	56	46 00
56	J. M. Munro	531	703 00	1,817	987 50	13	5 00	398	489 95
57	Peter Ryan	716	1,226 50	8,056	3,093 75	141	38 35	2,455	2,554 15
58	R. H. Bowes	625	1,049 95	13 659	3,323 05	157	41 95	3,185	3,528 50
59	C. D. Barr	60	118 70	149	408 20	5	1 25	162	230 45
60	J. D. Moore	132	148 55	876	395 65	65	16 45	403	487 65
61	J. C. Crow	640	1,005 15	2,456	721 70	51	19 45	424	542 61
62	James Tucker	246	272 30	263	170 05	3	75	138	143 75
63	Henry Hortop	56	70 90	1,297	467 55	2	50	248	303 35
64	R. K. Hope	1,100	1,863 95	5,050	1,994 55	27	12 20	1,117	1,374 76
65	W. J. Hill	171	424 65	1,954	1,926 40	57	16 10	928	1,235 06
66	J. D. McKay	133	235 10	593	288 05	2	75	142	172 30

of Deeds for the Province of Ontario, etc.—*Continued.*

Schedule A.—*Continued.*

Amount received for work done for municipalities. 26	From other sources not enumerated. 27	Fees earned and not received. 28	Gross amount of fees earned for the year 1916. 29	Gross amount for 1915. 30	Gross amount for 1914. 30a	Amount paid Deputy Registrars for services. 31	Other charges in connection with office. 31a	No. of Registry Division.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	47 35	.....	3,085 82	3,321 06	4,641 74	732 96	524 25	1
.....	.....	193 60	3,529 85	3,903 35	3,624 25	.....	1,360 90	2
.....	50 60	420 74	4,406 03	4,554 90	4,754 00	1,040 00	664 76	3
893 70	66 65	25 30	4,610 60	5,345 79	5,738 39	1,380 00	960 25	4
.....	40 90	.....	1,886 95	1,783 85	1 708 15	600 00	205 87	5
.....	13 25	.....	1,282 30	1,319 95	1,284 60	550 00	20 00	6
.....	12 60	.....	1,018 55	1,192 65	1,179 55	35 00	.....	7
.....	77 33	21 90	1,095 03	1,285 37	1,311 01	420 00	20 00	8
19 25	277 18	198 24	4,672 70	4,817 55	5,212 15	682 00	421 64	9
62 80	143 90	.....	12,679 00	10,662 70	12,293 10	1,360 10	2,835 87	10
.....	.....	.....	1,775 50	2,123 30	2,166 25	.....	457 00	11
.....	34 50	102 63	1,232 53	1,572 18	1,814 90	430 00	13 00	12
.....	.....	2 50	1,203 10	1,277 60	1,312 80	.....	219 00	13
.....	46 55	432 72	2,908 00	2,991 85	3,242 10	700 00	337 00	14
.....	68 10	221 85	2,199 45	2,122 70	2,538 75	600 00	503 75	15
.....	44 35	262 51	2,473 45	2,586 80	2,804 32	725 00	458 70	16
.....	27 00	.....	491 25	449 45	518 50	129 55	.....	17
.....	60 30	84 64	2,562 40	2,703 85	3,517 97	765 00	296 00	18
434 00	25 60	429 20	4,504 15	4 118 25	5 340 03	1,300 00	758 91	19
.....	.....	874 45	4,316 90	4 679 82	4,912 28	800 00	789 25	20
155 27	150 77	.....	1,613 82	1,528 55	1,912 15	.....	502 92	21
.....	75 43	166 54	6,602 16	6,426 27	7,000 33	1,600 00	862 89	22
.....	.....	.....	*212 60	181 40	288 60	100 00	3 80	23
426 50	73 55	244 66	5,379 56	5,792 18	7,383 55	802 50	2,056 46	24
.....	.....	.....	967 75	957 20	1,102 00	12 00	.....	25
.....	.....	.....	1,336 90	1,415 60	1,617 05	200 00	.....	26
.....	59 25	117 50	2,707 15	2 598 35	2 781 70	895 85	251 88	27
.....	80 85	38 35	1,638 85	1,713 25	1,748 55	600 00	273 50	28
329 40	67 70	378 99	5,792 22	6 421 90	7,737 92	924 00	753 70	29
46 15	37 15	.....	3,278 05	3 674 45	4,969 95	336 00	82 00	30
.....	12 80	15 00	683 10	689 53	739 50	300 00	20 50	31
.....	.....	107 00	3,368 09	3,310 00	4,009 70	1 280 00	.....	32
50 00	18 90	250 00	1,478 80	2,249 80	1,723 71	550 00	12 00	33
.....	61 63	.....	1,391 83	1,948 85	2,161 00	600 00	.....	34
.....	.....	50	3,026 60	3,125 80	3,525 56	967 00	489 00	35
518 40	195 90	20 00	1,959 20	2,116 60	1,878 30	520 00	37 00	36
.....	3 40	49 52	1,154 20	1,350 35	1,508 85	420 00	13 50	37
.....	.....	.....	*1,064 92	1,408 71	1,622 03	600 00	.....	38
.....	109 60	.....	3,970 84	4 182 23	4,628 55	1,040 00	666 80	39
452 80	821 19	.....	6,436 64	8,673 80	10,265 76	1 856 70	1 172 70	40
.....	91 75	.....	4,915 95	5,080 20	5,163 25	900 00	750 60	41
.....	68 30	90 45	1,400 95	1,504 65	1,472 30	410 00	.....	42
250 00	.....	50 00	1,821 20	2,032 85	2,489 48	700 00	275 00	43
.....	40 85	.....	3,153 50	3,136 25	3,522 55	624 00	292 25	44
.....	.....	10 10	1,374 15	1,355 45	1,660 15	520 00	.....	45
.....	40 40	.....	3,132 86	3,370 75	4,686 70	1,450 00	281 00	46
.....	50 00	.....	2,231 40	2,307 30	2 290 25	600 00	122 00	47
.....	19 50	.....	1,333 45	1,345 40	1,311 35	693 40	.....	48
.....	65	.....	*34 50	28 45	59 65	.....	.....	49
.....	170 10	125 25	3,255 20	3,553 30	3,384 80	624 00	540 00	50
.....	299 50	11 87	2,833 15	3,026 25	2 636 90	656 25	389 37	51
.....	79 85	513 86	6,940 38	7,211 71	8,338 06	1,500 00	2,689 58	52
1,168 50	60 50	77 55	1,949 10	1,799 35	2,053 65	658 00	58 99	53
.....	10 70	.....	LTA 3,726 55	846 07	1,199 53	900 00	540 00	54
.....	.....	.....	*46 00	.....	.....	.....	.....	55
.....	170 30	.....	4,832 64	6,627 46	13,023 41	1,954 30	3,288 90	56
.....	.....	.....	16,303 80	20,351 85	32,263 25	3,744 00	7,197 00	57
.....	.....	.....	18,302 20	21,302 60	33,014 30	5,080 00	8,274 00	58
.....	92 60	27 35	2,724 10	2,162 25	2,900 40	700 00	527 60	59
.....	21 35	926 65	5,662 75	6 085 45	7,815 10	1,500 00	1,396 20	60
.....	172 65	1,132 38	7,858 90	7,879 22	9,856 16	1,200 00	2,304 19	61
.....	39 55	2 80	1,980 36	1,958 70	1,999 25	600 00	357 00	62
.....	44 30	.....	2 821 75	3,202 15	3,645 75	520 00	290 00	63
.....	27 00	1,060 04	14,545 45	14,761 08	20,073 12	3,000 00	4,966 00	64
3,377 51	108 65	.....	11,219 79	16,131 58	23 609 31	2 080 00	4,486 00	65
376 70	.....	.....	2,145 79	2,743 20	3,137 57	564 00	190 90	66

*Exclusive of the Land Titles Office.

Fees and Emoluments received by the Registrars

Schedule A.—*Continued.*

No. of Registry Division.	Name of Registrar.	Surplus of gross income to municipality under sec. 101, cap. 124, R.S.O.				Surplus of net income to municipality under ss. 101 and 102, cap. 124, R.S.O.			
		Amount for 1916.	When paid.	Amount for 1915.	Amount for 1914.	Amount for 1916.	When paid.)	Amount for 1915.	Amount for 1914.
		32	32a	35	35a	36	37	40	40a
		$ c.		$ c.	$ c.	$ c.		$ c.	$ c.
1	C. F. Farwell								
2	Alex. Graham	158 95	Jan. 15, 1917	271 00	187 00	52 00	Jan. 15, 1917	187 00	77 40
3	W. H. McFarlane	421 81	Jan. 17, 1917	471 96	551 60	105 89	Jan. 15, 1917	83 87	94 71
4	P. J. Coffey	494 24	Jan. 15, 1917	788 31	945 35	27 61	Jan. 15, 1917	21 14	15 92
5	D. J. Hunter								
6	R. J. Dillen								
7	W. H. Scott								
8	S. Pollard								
9	James H. Coyne	*505 85	Jan. 16, 1917	*562 47	*756 86	*315 07	Jan. 16, 1917	*331 51	*399 52
10	J. O. Reaume	3,721 60	Jan. 15, 1917	2,915 08	3,567 24	1,189 76	Jan. 15, 1917	588 66	1,311 96
11	W. J. Gibson							1 80	4 35
12	J. A. McRae								
13	W. S. Johnston								
14	R. McKnight	40 80	Jan. 18, 1917	49 13	98 42	33 02	Jan. 18, 1917	60 74	74 34
15	M. K. Richardson			8 88					10 88
16	P. R. Howard			8 68	30 40				
17	E. C. Young								
18	Victor Chisholm	1 40	Jan. 16, 1917	20 38	155 39			13 97	97 46
19	S. Russell	451 66		335 51	786 01	49 36		21 19	150 40
20	W. Coats	395 07	Jan. 11, 1917	521 93	614 91	116 52	Jan. 11, 1917	106 71	129 96
21	James P. Gildersleeve								
22	Arthur J. Dunn	1,290 86	Jan. 15, 1917	1,220 50	1,450 11	254 52	Jan. 15, 1917	137 15	278 39
23	C. W. Chadwick								
24	A. MacLean	801 82	Jan. 10, 1917	967 27	1,603 42	21 87	Jan. 10, 1917	64 63	84 15
25	H. C. Bowland								
26	James Armour								
27	W. H. Dingle, Dep., 1½ mo. J. T. Gallagher, 10½ mos.	20 71		9 84	28 17	4 87			
28	G. S. Reid								
29	C. E. Fisher	966 89	Jan. 17, 1917	1,219 96	1,745 17	373 81	Jan. 17, 1917	581 24	860 60
30	R. H. Dignan	105 61	Jan. 13, 1917	188 05	591 18	226 32	Jan. 13, 1917	283 44	688 88
31	W. R. Abrey								
32	Jas. H. Marshall	123 61	Jan. 15, 1917	112 00	306 33	46 45	Jan. 15, 1917	27 80	104 95
33	Richard Dunlop							18 78	
34	John E. Lount								
35	W. M. McGuire	55 32	Jan. 12, 1917	75 16	157 76	1 53	Jan. 12, 1915	10 26	35 10
36	A. G. Willoughby							5 16	
37	H. McCullough								
38	J. M. Deacon †				†278 97				
39	G. W. Dryden*	291 25	Jan. 17, 1917	354 70	501 42	47 27	Jan. 17, 1917	64 50	47 06
40	J. P. Fisher	1,224 65	Jan. 15, 1917	1,834 40	2,606 82	86 52	Jan. 15, 1917	32 40	184 31
41	G. R. Pattullo	616 38	Jan. 15, 1917	682 08	715 30	227 24		231 87	186 90
42	C. Gillespie								
43	Samuel Charters								
44	James Steele	80 70	Jan. 15, 1917	77 25	156 76	81 31	Jan. 15, 1917	50 87	107 25
45	H. F. Sharp								
46	B. Morrow			124 15	524 68				131 40
47	F. W. Thistlethwaite					94	Jan. 8, 1917	7 00	
48	Walter MacKenzie								
49	W. J. Keating								
50	R. A. Campbell	101 04		165 99	126 96	49 01		103 66	66 56
51	W. H. Lowrie S. S. A. Lowrie, Dep. Jno. A. Gamble	33 31		55 25	13 69	25 42		40 60	
52	J. F. Palling	1,250 80	Jan. 15, 1917	1,485 40	1,937 90				15 30
53	J. C. Alguire								
54	Stephen Fournier ‡					107 31	Jan. 17, 1917	19 67	
55	W. H. Lewis								
56	John M. Munro ‡					212 50		816 69	2,918 35
57	Peter Ryan					*1,481 40	Jan. 15, 1917	3,353 50	9 493 43
58	Robert H. Bowes					*1,274 10	Jan. 15, 1917	2,302 92	7,417 17
59	Charles D. Barr				40 04				
60	John D. Moore	915 10	Jan. 2, 1917	1,084 18	1,776 04	35 15	Jan. 2, 1917	74 89	258 07
61	J. C. Crow	1,793 56	Jan. 25, 1917	1,801 69	2,592 46	168 35	Jan. 25, 1917	85 69	279 22
62	James Tucker								
63	Henry Hortop	32 18	Jan. 15, 1917	90 43	193 72	47 96	Jan. 15, 1917	104 34	148 40
64	Robert K. Hope					2,321 51	Jan. 15,1917	2,309 12	5,380 86
65	W. J. Hill	*2,137 91	Jan. 15, 1917	5,102 63	8,093 72	*1 58	Jan. 15, 1917	722 47	2,005 83
66	James D. McKay				*77 51			10 22	*105 92

*See R.S.O., Cap. 124, Sec. 148.
†Fees of Land Titles and Resistry Office are trausmitted to Provincial Treasurer monthly. Registrar and staff
‡See R.S.O., Cap. 124, Sec. 109.

of Deeds for the Province of Ontario, etc.— *Continued.*

Schedule A.—*Continued.*			Schedule B.							
Net amount received by Registrar.			Number and aggregate amount of mortgages registered.							
Amount for 1916.	Amount for 1915.	Amount for 1914.	For nominal consideration or amount not specified.	For $1,000 or under.	Over $1,000 and not exceeding $2,000.	Over $2,000 and not exceeding $5,000.	Over $5,000.	Total number.	Aggregate amount.	No. of Registry Division.
41	41a	41b	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
$ c.	$ c.	$ c.							$ c.	
1,809 07	2,046 66	3,023 54	6	217	53	34	13	325	469,996 65	1
1,958 00	2,243 80	2,059 60	6	225	172	135	27	565	916,343 59	2
2,173 57	2,085 50	2,128 82	12	292	186	180	18	688	1,190,428 05	3
1,748 50	1,690 34	2,110 98	15	295	137	117	23	587	932,378 95	4
1,081 08	885 79	773 31	4	96	71	90	3	264	473 751 00	5
712 30	749 95	664 60	.....	94	71	68	13	246	404,312 00	6
983 55	581 33	574 78	.....	43	25	15	7	90	211,067 72	7
655 03	765 37	776 01	1	34	27	29	6	97	205,927 52	8
2,715 08	2,731 50	2 799 51	10	356	197	163	31	759	1,286 694 79	9
3,580 77	2,988 66	2,909 59	5	690	810	424	97	2,027	4 121,217 98	10
1,318 50	1,516 70	1,543 50	2	112	48	45	9	216	323,327 00	11
789 53	1,019 66	1,336 90	.....	118	54	61	5	138	419,209 10	12
984 10	917 60	592 80	1	89	61	26	3	180	267 711 00	13
1,797 18	1,980 14	2,098 04	16	195	125	105	17	458	835,337 87	14
1,095 70	1,015 90	1,608 87	8	128	133	80	9	358	566,775 52	17
1,289 75	1,275 37	1,393 65	1	140	70	50	29	289	462,417 00	15
361 70	449 45	518 50	.....	29	3	.....	.....	33	16,283 00	16
1,500 00	1,625 75	2,139 87	18	120	94	101	32	365	819,701 85	18
1,944 21	1,690 68	2,350 92	.....	328	135	110	15	588	857,043 07	19
2,216 06	2,176 83	2,269 86	11	206	200	205	22	644	1,261,673 00	20
1 109 90	1,002 49	1,395 19	.....	107	66	56	13	243	450 652 00	21
2 593 89	2,234 87	2,554 49	4	486	271	239	74	1,074	2,134,706 56	22
108 80	77 40	177 60	.....	15	7	8	3	33	90,927 88	23
1,696 91	2,008 52	2,546 59	14	346	237	193	35	825	1,366,694 38	24
967 75	870 80	1,001 30	2	41	15	2	137	274	149 514 83	25
1.136 90	1,215 66	1,417 05	9	112	54	39	10	224	285,328 55	26
1,543 84	958 18	1,193 48	1	.....	.....	.....	.....	.....	674,579 60	27
765 35	1,218 25	633 55	....	104	61	53	13	232	429,194 80	28
2,773 82	2,981 25	3 260 60	15	254	226	170	32	697	1,251,756 61	29
2 528 11	2,661 36	3,205 89	3	292	204	107	21	627	1.019,312 19	30
362 60	369 03	419 00	.....	807	14	4	.....	825	72,144 93	31
1,918 03	1,750 20	2,274 77	.....	109	67	66	11	253	745,546 00	32
916 80	1,669 02	1,151 71	1	85	63	65	4	218	365,647 46	33
791 83	1,273 85	1,476 00	1	70	18	4	1	93	89,038 34	34
1,513 75	1,592 38	1,727 30	5	212	97	74	11	399	606,999 00	35
1,402 20	1,546 44	1,293 30	3	97	59	46	4	209	356,177 57	36
720 70	875 35	928 85	1	80	23	23	2	129	162,345 08	37
808 71	.....	1,000 00	18	78	32	12	3	143	167,289 74	38
1,925 52	2,008 03	2 238 27	3	197	108	140	41	489	905,244 91	39
2,096 07	2,504 45	2,803 78	36	358	208	281	108	991	2 986,733 00	40
2,430 25	2,541 04	2 642 04	7	289	217	202	76	792	1,558,292 00	41
990 55	1 088 65	1,019 30	3	124	23	12	1	164	106,396 96	42
846 20	1,073 92	1 494 48	3	80	64	108	37	292	549,192 00	43
2,075 24	1,953 48	2,179 04	2	198	200	155	29	586	1 151,921 92	44
854 15	835 45	1,140 15	2	40	53	35	47	199	492 281 00	45
1,401 86	1,490 60	2,275 62	1	188	98	68	12	367	565,095 19	46
1,508 46	1,570 00	1 482 25	1	167	102	110	24	404	827,052 64	47
645 05	731 10	732 45	.....	105	46	49	7	207	321,875 40	48
34 50	28 45	59 65	.....	.....	.....	.....	.....	.....	.....	49
1 941 15	2,164 65	2,015 23	22	279	95	81	17	494	664,239 45	50
1,728 80	1,865 40	1,503 36	2	179	113	94	20	408	491,098 75	51
1,500 00	1,419 30	1,791 66	17	484	218	167	29	918	1,297,953 90	52
1 232 11	1,220 26	1,440 97	1	184	62	56	9	319	438,618 78	53
2 179 24	1,677 05	1,464 53	2	44	15	12	8	81	6,218 311 05	54
46 00	41 15	58 00	.....	.....	.....	.....	.....	.....	.....	55
2 495 84	3,218 69	4,324 27	44	175	61	62	36	382	957,956 32	56
2,881 40	4,372 59	5,054 82	54	687	832	517	265	2,363	19.578,702 00	57
3,674 10	4,255 68	4,824 13	93	844	780	609	155	2,443	5,423,880 00	58
1,496 50	1,037 15	1,410 76	5	156	103	58	14	336	503,015 06	59
1,816 30	2,049 53	2 602 14	24	395	351	205	50	1,025	1 891,603 50	60
2,392 80	2 092 74	2,651 52	26	486	275	163	26	982	1,474,406 00	61
1,023 36	1,221 95	1.274 75	4	111	67	112	14	308	605,966 00	62
1,931 61	2,167 38	2.149 91	18	176	98	113	23	428	812 809 17	63
4 257 94	4,256 56	4 597 87	31	1.073	569	429	93	2,200	19,064,506 00	64
1,514 30	3,122 48	4,405 82	.....	672	307	151	46	1,176	2,383,647 00	65
1.390 89	1,592 45	2 097 19	1	144	79	68	6	298	517,486 86	66

are paid salaries—O. in C. 31st October, 1914.

SCHEDULE C

Shewing the Receipts, Disbursements, and Net Incomes of the Registrars of Deeds for the year ending December 31st, 1916, and the sums paid by them under Section 101 of the Registry Act

No.	Registry Division	Where Office Situate	Registrar	Gross Receipts	Disbursements	Net Receipts	Percentage paid under Sec. 101	Net Income	No.
				$ c.	$ c.	$ c.	$ c.	$ c.	
1	Algoma	Sault Ste. Marie	C. F. Farwell	3,085 82	1,276 75	1,809 07	.....	1,809 07	1
2	Brant	Brantford	A. Graham	3,529 85	1,360 90	2,168 95	210 95	1,958 00	2
3	Bruce	Walkerton	W. H. McFarlane	4,406 03	1,704 76	2,701 27	527 70	2,173 57	3
4	Carleton	Ottawa	P. J. Coffey	4,610 60	2,340 25	2,270 35	521 85	1,748 50	4
5	Dufferin	Orangeville	D. J. Hunter	1,886 95	805 87	1,081 08	.....	1,081 08	5
6	Dundas	Morrisburg	R. J. Dillen	1,282 30	570 00	712 30	.....	712 30	6
7	Durham E.	Port Hope	§Wm. H. Scott	1,018 55	35 00	983 55	.....	983 55	7
8	Durham W.	Bowmanville	S. Pollard	1,095 03	440 00	665 03	.....	655 03	8
9	Elgin	St. Thomas	J. H. Coyne	4,639 64	1,103 64	3,536 00	820 92	2,715 08	9
10	Essex	Sandwich	J. O. Reaume	12,679 00	4,195 87	8,483 13	4,902 36	3,580 77	10
11	Frontenac	Kingston	W. J. Gibson	1,775 50	457 00	1,318 50	.....	1,318 50	11
12	Glengarry	Alexandria	J. A. McRae	1,232 53	443 00	789 53	.....	789 53	12
13	Grenville	Prescott	W. S. Johnston	1,203 10	219 00	984 00	.....	984 00	13
14	Grey N.	Owen Sound	R. McKnight	2,908 00	1,037 00	1,871 00	73 82	1,797 18	14
15	Grey S.	Durham	M. K. Richardson	2,199 45	1,103 75	1,095 70	.....	1,095 70	15
16	Haldimand	Cayuga	P. R. Howard	2,473 45	1,183 70	1,289 75	.....	1,289 75	16
17	Haliburton	Minden	E. C. Young	491 25	129 55	361 70	.....	361 70	17
18	Halton	Milton	V. Chisholm	2,562 40	1,061 00	1,501 40	n 6 38	1,495 02	18
19	Hastings	Belleville	S. Russell	4,504 15	2,058 91	2,445 24	501 02	1,944 21	19
20	Huron	Goderich	W. Coats	4,316 90	1,589 25	2,727 65	511 59	2,216 06	20
21	Kingston	Kingston	J. P. Gildersleeve	1,612 82	502 92	1,109 90	.....	1,109 90	21
22	Kent	Chatham	A. J. Dunn	6,602 16	2,462 89	4,139 27	1,545 38	2,593 89	22
23	Kenora	Kenora	‖C. W. Chadwick	†212 60	103 80	108 80	.....	108 80	23
24	Lambton	Sarnia	A. MacLean	5,379 56	2,858 96	2,520 60	823 69	1,696 91	24
25	Lanark N.	Almonte	H. C. Bowland	967 75	12 00	955 75	.....	955 75	25
26	Lanark S.	Perth	Jas. Armour	1,336 90	200 00	1,136 90	.....	1,136 90	26
27	Leeds	Brockville	‖J. T. Gallagher	2,707 15	1,137 73	1,569 42	25 58	1,543 84	27
28	Lennox &Addington	Napanee	G. S. Reid	1,638 85	873 50	765 35	.....	765 35	28
29	Lincoln	St. Catharines	C. E. Fisher	5,792 22	1,677 70	4,114 52	1,340 70	2,773 82	29
30	London	London	R. H. Dignan	3,278 05	418 00	2,860 00	331 94	2,528 11	30
31	Manitoulin	Gore Bay	W. R. Abrey	† 683 10	320 50	362 60	.....	362 60	31
32	Middlesex E. & N.	London	Jas. H. Marshall	3,368 09	1,280 00	2,088 09	170 06	1,918 03	32
33	Middlesex W.	Glencoe	R. Dunlop	1,478 80	562 00	916 80	.....	916 80	33

34	Muskoka	Bracebridge	J. E. Lount	1,391 83	600 00	791 83	.....	791 83	34
35	Norfolk	Simcoe	W. M. McGuire	3,026 60	1,456 00	1,570 60	56 85	1,513 75	35
36	Northumberland E.	Colborne	A. G. Willoughby	1,959 20	557 00	1,402 20	.....	1,402 20	36
37	Northumberland W.	Cobourg	H. McCullough	1,154 20	433 50	720 70	.....	720 70	37
38	Nipissing	North Bay	*J. M. Deacon	† 1,064 93	600 00	808 71	.....	808 71	38
39	Ontario	Whitby	G. W. Dryden	3,970 84	1,706 80	2,264 04	338 52	1,925 52	39
40	Ottawa	Ottawa	J. P. Fisher	6,436 64	3,029 40	3,407 24	1,311 17	2,096 07	40
41	Oxford	Woodstock	G. R. Pattullo	4,915 95	1,542 00	3,373 95	843 65	2,530 22	41
42	Parry Sound	Parry Sound	C. Gillespie	1,400 95	410 00	990 95	.....	990 95	42
43	Peel	Brampton	S. Charters	1,821 20	975 00	846 00	.....	846 00	43
44	Perth N.	Stratford	Jas. Steele	3,153 50	716 25	2,437 25	162 01	2,075 24	44
45	Perth S.	St. Mary's	H. F. Sharp	1,374 15	520 00	854 15	.....	854 15	45
46	Peterborough	Peterborough	B. Morrow	3,132 86	1,731 00	1,401 86	.....	1,401 86	46
47	Prescott	L'Orignal	F. W. Thistlethwaite	2,231 40	722 00	1,509 40	94	1,508 46	47
48	Prince Edward	Picton	W. MacKenzie	1,338 45	693 40	645 05	.....	645 05	48
49	Rainy River	Fort Frances	W. J. Keating	† 34 50	.....	34 50	.....	34 50	49
50	Renfrew	Pembroke	R. A. Campbell	3,255 20	1,164 00	2,091 20	150 05	1,941 15	50
51	Russell	Russell	!Jno. A. Gamble	2,833 15	1,045 62	1,787 52	58 73	1,728 80	51
52	Simcoe	Barrie	J. F. Palling	6,940 38	4,189 58	2,750 80	1,426 15	f1,324 65	52
53	Stormont	Cornwall	J. C. Alguire	1,949 10	716 99	1,232 11	.....	1,232 11	53
54	Sudbury	Sudbury	S. Fournier	P 3,726 53	1,440 00	2,286 53	107 31	2,179 24	54
55	Temiskaming	Haileybury	W. H. Lewis	† 46 00	.....	46 00	.....	46 00	55
56	Thunder Bay	Port Arthur	J. M. Munro	B 7,951 54	5,243 20	2,708 34	212 50	2,495 84	56
57	Toronto E.	Toronto	Peter Ryan	16,303 80	10,941 00	5,362 80	1,481 40	3,881 40	57
58	Toronto W.	Toronto	R. H. Bowes	18,302 20	13,354 00	4,948 20	1,274 10	3,674 10	58
59	Victoria	Lindsay	C. D. Barr	2,724 10	1,227 60	1,496 50	‡	1,496 50	59
60	Waterloo	Kitchener	J. D. Moore	5,662 75	2,896 20	2,766 55	950 25	1,816 30	60
61	Welland	Welland	J. C. Crow	7,858 90	3,504 19	4,354 71	1,961 91	2,392 80	61
62	Wellington N.	Arthur	Jas. Tucker	1,980 36	957 00	1,023 36	.....	1,023 36	62
63	Wellington S. & C.	Guelph	Hy. Hortop	2,821 75	810 00	2,011 75	80 14	1,931 61	63
64	Wentworth	Hamilton	R. K. Hope	14,545 45	7,966 00	6,579 45	2,321 51	4,257 94	64
65	York E. & W.	Toronto	W. J. Hill	11,219 79	7,066 00	4,153 79	3,139 49	1,514 30	65
66	York N.	Newmarket	J. D. McKay	2,145 79	754 90	1,390 89	.....	1,390 89	66

* Fees of Registry Office and Land Titles Office are remitted monthly to the Provincial Treasurer. Mr. Deacon and staff are paid salaries. O. in C., 31st October, 1914.

† Exclusive of Land Titles.

f Registrar retained $175.35 out of the percentage to make income $1,500.00. See Sec. 101, Registry Act.

‡ Percentage on gross fees was $22.41. This, however, not paid, as income below $1,500.00. See Sec. 101, Registry Act.

P Of which $3,049.60 is receipts of Land Titles.
B Of which $3,118.19 is receipts of Land Titles.
} See R.S.O., Cap. 124, Sec. 109.

j Appointed O. in C., 29th February, 1916.

|| Appointed O. in C., 2nd February, 1916.

! Appointed O. in C., 22nd November, 1916.

§ Appointed O. in C., 27th June, 1916.

n Of this $4.98 was retained to make income $1,500.00. See Sec. 101, Registry Act.

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TWENTIETH ANNUAL REPORT

OF THE

Provincial Municipal Auditor

FOR

1916

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:

Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty

1917

Printed by
WILLIAM BRIGGS,
Cor. Queen & John Sts.
Toronto.

To His Honour Sir John Strathearn Hendrie, K.C.M.G., C.V.O.

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

I have the honour to present to you the report of the Provincial Municipal Auditor for the year 1916.

Wm. David McPherson,
Provincial Secretary.

Parliament Buildings,
Toronto, January, 1917.

PARLIAMENT BUILDINGS,
TORONTO, January, 1917.

TO THE HONOURABLE W. D. MCPHERSON, K.C., M.P.P.,
Provincial Secretary of Ontario.

SIR,—I have the honour to present to you my report for the year 1916.

I have the honour to be,

Sir,

Your obedient servant,

J. W. SHARPE,
Provincial Municipal Auditor.

Report of the Provincial Municipal Auditor

Toronto, January, 1917.

To the Honourable W. D. McPherson, K.C., M.P.P.,
Provincial Secretary of Ontario.

Sir,—I have the honour to present to you the Twentieth Annual Report of the Provincial Municipal Auditor.

Town of St. Mary's, Township of Head, Maria and Clara, Township of Caldwell.

The audits in these Municipalities which were referred to in my last annual report have been completed. The respective reports are submitted herewith.

Township of Bucke.

A petition signed by 62 ratepayers of the Municipality asking for an audit was received on December 11th, 1915. An Order in Council bearing date of 31st December, 1915, confirmed the appointment of Mr. Henry Glover, of Toronto, accountant, to make the necessary investigation and report. His report was received on March 11th, 1916, and is submitted herewith.

Township of Tilbury East.

A petition signed by 51 ratepayers of this Municipality was received asking for a commission to be issued to investigate the affairs of the Municipality. It was considered that an audit was advisable. An Order in Council bearing date the 7th day of March, 1916, confirmed the appointment of Mr. A. F. Falls, chartered accountant, to make the necessary investigation and report. Mr. Falls' report was received on August 3rd, 1916, and is submitted herewith.

Town of Cochrane.

On the 6th day of March, 1916, a copy of resolution of the Council of the Town of Cochrane was received requesting the appointment of Mr. Henry Glover, of Toronto, accountant, to audit the Town accounts for 1915. An Order in Council dated 9th day of March, 1916, confirmed the appointment of Mr. Glover, whose report was received on 17th April, 1916, and is submitted herewith.

Township of Gainsboro.

At the request of the Treasurer of this Township the Collector's Rolls and returns for the years 1913, 1914 and 1915 were examined and report made which is submitted herewith. On October 27th, 1916, a petition signed by 34 ratepayers of the Township was received asking for commission to be issued under Section 313 of the Municipal Act to enquire into the financial affairs of the Municipality. It

was considered that the case was not one for the issue of a commission, but for an audit. An Order in Council dated 9th November, 1916, confirmed the appointment of Mr. Henry Glover, of Toronto, accountant, to make the necessary investigation and report. The work has not yet been completed.

Township of Tisdale.

On 17th November, 1916, a petition signed by 146 resident ratepayers of the Municipality asking for an audit of the affairs of the Municipality was received. An Order in Council dated 19th December, 1916, confirmed the appointment of Mr. Charles A. Hammond to make the necessary investigation and report. The work has not yet been completed.

I have the honour to be,

Sir,

Your obedient servant,

J. W. Sharpe,
Provincial Municipal Auditor.

APPENDIX.

Town of St. Mary's.

Provincial Government Audit.

Toronto, February 11, 1916.

Report of special inspection, audit and examination of the books, accounts, vouchers and moneys of the Municipal Corporation of the Town of St. Mary's, in the County of Perth, Province of Ontario, Dominion of Canada.

Upon the appointment of the Provincial Municipal Auditor, confirmed by an Order in Council approved by His Honour the Lieutenant-Governor of the Province of Ontario, the 8th day of October, 1915, A. F. Falls, F.C.A., of the City of Toronto, chartered accountant, was instructed and empowered to make an inspection, audit and examination of the books, accounts, vouchers and moneys of the Municipal Corporation of the Town of St. Mary's, under the provisions of Sub.-Sec. 3, Sec. 10, Chap. 200, R.S.O. 1914.

In pursuance of the said authority and instructions the said A. F. Falls, chartered accountant, hereby reports that he has made an inspection and audit of the various accounts of the said Corporation.

The audit is made upon the petition of certain ratepayers addressed to the Provincial Municipal Auditor.

Scope of Audit.

The inspection and examination under the authority of the Order in Council covers the accounts of the Municipality from the year 1910, including the Assessment and Tax Rolls, Vouchers, School and General Accounts, as well as the accounts of the Water, Light and Heat Commission.

The Council of 1915 authorized the auditing of the books to Dec. 31st, 1915.

T. M. Clark has been Clerk during the entire period covered by this audit.

Miss M. E. Long has been Treasurer during the period audited.

W. Moyes as Assessor and Joseph Farr as Collector have occupied these positions for some years.

Assessment Roll.

The Assessment is made by wards, the names in alphabetical order, which is customary in a number of Municipalities and works out all right where the Assessor is extremely careful. Where there are many local improvement levies it is found that assessment by blocks or streets is better and the omission of pieces of property is less likely to occur.

W. Moyes has adopted a splendid method of assessing in having the assessment notices in book form in duplicate; using a carbon sheet he retains an exact copy of each notice he issues each year. In this way he can check the roll and see that all property assessed is entered. This method might be adopted by other municipalities to their advantage.

The Assessment Rolls are carefully prepared, all exempted property is recorded with the valuation.

Property purchased by the Town at tax sale still held by the Town was up to 1915 assessed in the name of the former owner and placed on the tax roll and taxes were written off by the Council at the end of the year. This has now been changed

and the 1916 assessment includes these with the other Town properties which are not taxed.

Tax Rolls.

The rolls are carefully prepared and properly recapitulated at the end of the roll.

In 1904 debentures were issued to buy a Public School site. These have been paid yearly as they matured out of the general funds of the Town, but should have been specially levied for on the tax rolls against Public School supporters only. These amounts have now been charged to the Public School Board and will have to be collected for in 1916. This is referred to under the heading of "Public Schools" later in this report.

In the 1915 roll under the heading of "Debenture Rate" Separate School supporters were charged 6.40 mills, Public School supporters were charged 8.01 mills, this difference of 1.61 mills was included with the debenture rate to provide for the interest on the money borrowed to furnish the Public School Board funds to build the new school, the conditions of the money market being unfavourable for disposing of the debentures at that time. Under the heading of "Public School Board" all interest paid for money borrowed for the new school has been charged as well as other items properly payable by the Public School supporters, and credit has been given for all money levied against lands of Public School supporters on the tax rolls of the Town of St. Mary's.

By placing part of the Public School taxes under the heading of "Debenture Rates" the Town would have lost that part of the school funds included due from Wood Specialty Co. and St. Mary's P. Cement Co., as they are exempt from all but school taxes and were not billed with school taxes included with debenture debt. This amounted to $112.77 which has been billed to them and collected. But for this audit the amount would have been lost to the Town. There is a column provided in the tax roll for school debenture debt. All public school taxes imposed for whatever purpose must appear under the columns provided for school taxes in the roll to comply with the law.

Exemptions under the Act of 1895 are shown on the tax roll in separate columns.

In future the tax roll should show under separate columns from other taxes the Collegiate Institute taxes for debentures and amount of trustees' requisition, the Separate School tax, the Public School trustees' requisition and in another column the Public School taxes to meet debentures. This never has been done on the rolls of 1904 or since and has occasioned adjustment of the accounts since that date.

In former years personal and income taxes unpaid have been returned and entered by the Treasurer in the land tax arrears book. This is not correct as only taxes for which lands can be sold should be entered. No personal or income taxes should be returned unpaid by the Collector, unless there are no goods which the Collector could destrain for the amount. The Town has lost a considerable amount by the lax method of enforcing collection of taxes in past years. The impression seems to prevail that when five per cent. is imposed the ratepayer has an extended period in which to make payment. The five per cent. is a penalty and there is nothing in its imposition to prevent the Collector from seizing goods for taxes fourteen days after he has made his tax demand.

The present Collector is exceptionally careful and accurate in his work.

By a special Act in 1895 the Town of St. Mary's is authorized to exempt

farm lands within the Corporation of twenty-five acres or more used for farm purposes from certain general taxes. This is referred to at length under the heading of "Farm Lands."

The rate of taxation for the year 1915 includes general rate 13.69 and debenture rate 6.40 making a total of 20.09 mills. This exceeds 2 cents referred to in Sub.-Sec. 2, Sec. 297, Chap. 192, R.S.O. 1914, which restricts the Council from contracting any further debt until the annual rates are reduced to 20 mills.

Arrears of Taxes.

There were a number of items of arrears of taxes covering 1914 and previous years unpaid at the time of this audit. Notices were sent out and some of those in arrears seen personally with the result that over $600.00 has been paid to the Treasurer.

The manner of treating taxes in arrears was not understood here. All taxes in arrears have been placed on the Current Tax Roll each year, but merely as a memorandum; the amount was not added and extended with the current taxes. Any arrears paid the collector were turned over to the Treasurer and a receipt issued for the payment as if they had never been placed on the roll. Arrears of taxes on lands certified by the Assessor as occupied, as required by Sec. 129, Chap. 195, R.S.O. 1914, are to be returned by the Treasurer to the Clerk, "*And such Clerk shall add such arrears of taxes assessed against such lands and include the same in the Collector's roll for the current year.*"

No sale of lands for taxes has been held since 1912 except for the purpose of re-selling lands purchased by the Town for arrears at that sale.

The 1915 tax roll has not yet been returned as there are taxes unpaid which the Collector will have to distrain for unless paid before he can make his sworn statement as required by the Act.

Farm Land Taxes.

In 1895, Chap. 80, Vict. 58, a special Act for the Town of St. Mary's was passed.

"(1) That all lands in the said Town of St. Mary's while held and used as farm lands only, and in blocks of not less than 25 acres, shall from the date of the passing hereof be rated upon the assessed value thereof as follows:—

"(*a*) For expenditure for general Town purposes not more than 3½ mills on the dollar.

"(*b*) For the payment of the present debenture debt of the Town, the same rate as is required and is from time to time levied upon other property.

"(*c*) And for expenditure for Public School, Separate School and Collegiate Institute purposes, the same rate as is required and is from time to time levied upon other town property.

"And that no further or other rate be levied on said lands by the Council of the said Town of St. Mary's.

"(2) That the said lands mentioned in clause 1 hereof shall be wholly exempt from taxation for the payment of any future debenture debt of said Town, except such as is contracted for school purposes or for the renewal or consolidation of the present existing debenture debt, or some part thereof.

"(3) Lands mentioned in clause 1 not to be lessened by any of the exemptions of Con. Asst. Act of 1892.

"(4) That no owner of any such lands mentioned in clause 1. hereof, shall, in respect of such lands, have the right to vote upon any by-law for the creating or contracting any future debenture debt except such as is for school purposes or for the renewal or consolidation of the present existing debenture debt or some part thereof as aforesaid."

These exemptions have been allowed yearly since 1895 on all farm lands of 25 acres and over.

The question has been raised whether a Councillor who qualifies on lands exempted under the Act of 1895 has any right to vote as a member of the Council on any expenditures or for creating any debt to which he does not contribute. As this is a legal question it would be a wise proceeding if the Council would procure a legal opinion.

The tax on farm lands in St. Mary's in very few cases exceeds $1.00 per acre per year. More than half the area of St. Mary's is assessed as farm lands.

In 1894 and 1895 the general tax rate was 7½ mills when the limit of 3½ mills was fixed for farm lands of 25 acres or more. Since then the general tax has increased till in 1915 it was 13.69 mills. So that in 1895 property which paid 3 mills more than farm lands, in 1915 paid 10.19 mills more than farm lands. Besides this exemption these farm lands do not contribute to the payment of water, light or sidewalk debentures.

The farm lands in St. Mary's, in 1895, were assessed at an average of about $50.00 per acre, including buildings, which is practically the same figure that the land is assessed for in 1916. Some increase has been made in the assessment on buildings.

By inquiry it has been ascertained that some of these farm lands cannot be purchased to-day for twice what they are assessed for and the present Mayor informed me that his land was worth $150.00 an acre.

Action should be taken to see that these properties bear a more equitable portion of the taxes of the Town by increased assessment to a sum more in comparison to values and the Act granting exemptions revised to meet the present conditions.

When the ratepayers realize that the farms of 25 acres and more comprising 1,770 acres only contributed, in 1915, $1,876.83 of the taxes, while the balance of the Town contributed nearly $60,000.00, efforts will be put forth so that a more equitable distribution of the burden will be made.

Exemptions have been extended to owners of five acres and over, also on some pieces assessed for less than five acres, by an annual by-law passed by the Council under Section 7A of the Consolidated Asst. Act of 1892, which authorized towns and villages to exempt from certain taxes lands inside the corporation used for farming purposes.

In the year 1910 the Assessment Amendment Act under Sec. 39, Chap. 88, reenacted the same powers as contained in the Act of 1892 mentioned above.

The Assessment Amendment Act of 1913 Sec. 11, Chap. 46, *repealed* Sec. 39, Chap. 88 of 1910.

After the repealing of Sec. 39, Chap. 88 in 1913, the council of a town or village have no power or authority to pass by-laws to exempt from taxes lands of five acres or more used for farming purposes.

The by-laws passed in 1913, 1914 and 1915 to exempt lands of five acres and more were illegal as the power for the Council to pass such a by-law was rescinded by the repealing of the Act on May 6th, 1913.

The amount of exemption on the tax rolls for 1913, 1914 and 1915 for farm lands less than 25 acres, under by-laws passed by the Council each of the above years

contrary to law, as the Act authorizing such action was repealed in 1913 before the making of the tax roll for that year, were:—

1913	$388 07
1914	371 88
1915	294 36
	$1,054 31

The exemption of the above amount was illegal and the town lost that much revenue and would have continued a loss of revenue annually had their attention not been called to it by this audit.

The officials and members of the council were not aware the law was repealed, but the fact of their not knowing it cost the Town over $1,000.00.

Farm lands in St. Mary's under 25 acres cannot now be exempted by the Council from taxes.

Debentures.

Until recent years all town debentures were issued with an equal annual payment of interest and principal. In recent years the debentures are all issued for a term of years with coupons for interest only, necessitating sinking fund deposits yearly for each. The sinking fund for these debentures is in the hands of the Provincial Treasurer and has been maintained. The rate at which the sinking fund is calculated is 4 per cent., while the recent issue of debentures bear 5½ per cent.

The Town has made it a point to meet its debentures and interest payments at maturity promptly.

Most of the debenture issues are for 20 or 30 years. There will not be any appreciable reduction for some years in the annual amounts to be levied.

In 1912 the Town received $16,146.66 in full for 35 per cent. of principal and the interest on bonds of the St. Mary's & W. O. Ry., held by the Town as security, $14,000.00 of principal and the balance interest. By-law 215, passed Nov. 6, 1911, authorized the officials to release the bonds which the Town held as security for $40,000.00 of debentures issued and loaned the railway, and directed that the $14,000.00 principal money paid be set aside and invested by the Town for the purpose of applying the same upon the debentures of the Town issued to raise the money lent the railway, as and when they fall due, the interest derived from the investment of such principal money shall be applied annually upon the interest accruing upon such debentures. The interest received from the railway to be used for current expenditure or for paying overdraft or other floating debts of the Town. When this money was received from the railway it was all deposited to the General Account of the Town. It has never been set aside as a sinking fund and invested as directed by the by-law, but has been absorbed in the General funds.

Each year $875.00, one sixteenth of the $14,000.00 has been treated as applying against the debenture maturing that year. In 1912 printed audit report there is a statement which charges against the $14,000.00, $875.00 and $159.16 law costs as for 1912. This is not correct as the law costs must come out of the $2,146.66 of interest. The $14,000.00 principal cannot be diminished except by actual application on maturing debentures. The account of the funds as on December 31st, 1915, is as follows:

March 1, 1912. By Cash		$14,000 00
1912 Application on debenture maturing		875 00
		$13,125 00
1913 " " "		875 00
		$12,250 00
1914 " " "		875 00
		$11,375 00
1915 " " "		875 00
		$10,500 00

On Jan. 1, 1916, $875.00 will be charged and applied on the debenture maturing on that date.

This money should be set aside for the specific purpose it is required for. The misapplication of these funds is entirely wrong. The debenture by-law did not provide for a sinking fund, but the by-law authorizing the settlement with the railway constituted the $14,000.00 a sinking fund and legally it can only be so treated. The manner in which this fund has been diverted cannot be too severely criticized.

Under by-law 11, of 1904, the Town guaranteed debentures for $10,000.00, issued by Church & Watt, Limited, under by-law 7 of that company. Five hundred dollars principal is due August 1st each year, 1905 to 1924 inclusive, with 4 per cent. interest on unpaid principal. This was secured by mortgage to the Town. The ownership of the property has since changed hands and is now held by Title & Trusts up to 1915. The Town have received the full amount of principal and interest to meet the debenture payment. In 1915, the Town purchased for a park the property known as the Flats, paying $2,000.00 for this property, which was covered by the mortgage security for payment of debentures. The Title & Trust paid the $2,000.00 in cash on the mortgage to the Town, or, in other words, they commuted $2,000.00 of the $5,400.00 of debentures and interest not yet matured. The Town deposited this $2,000.00 to a special account, but later transferred it to the General account and used the money to pay for the park. This $2,000.00 must be treated as a sinking fund to pay the portion of the debentures not yet matured, and as it is 10-27 of the whole, the Town's liability to pay is distributed as follows:

Year.	Amount.	Title & Trust.	Town.
1916	$680 00	$428 15	$251 85
1917	660 00	415 56	244 44
1918	640 00	402 97	237 03
1919	620 00	390 37	229 63
1920	600 00	377 77	222 23
1921	580 00	365 18	214 82
1922	560 00	352 60	207 40
1923	540 00	340 00	200 00
1924	520 00	327 40	192 60
	$5,400 00	$3,400 00	$2,000 00

The Church & Watt, Limited, debentures guaranteed by the Town have never been included as a liability of the Town in any previous statements of auditors.

It has not been customary to cancel paid debentures and coupons, these as well as other vouchers are not stamped by the auditors of any of the years 1910 to 1914 as required under the Act.

In 1907, $6,000.00 was loaned to the St. Mary's Wood Specialty Co., Ltd., for

ten years at 5 per cent. interest, the principle to be refunded at the rate of $1,200.00 per year for the last five years the debentures were to run; three of these have matured amounting to $3,600.00. No principle payment has been received by the Town. On Dec. 15, 1917, the last instalment will mature. The Town have included each year the $1,200.00 as a source of revenue in their estimates, but have not collected the amounts. The Company is running and employing a number of hands.

The debenture liability of the Town is shown in the attached statements, which include the Public School debentures which are to be levied for against the property of the public school supporters only in a separate column of the tax roll. This never has been done with the result that Roman Catholic Separate School supporters have contributed to payment of public school debentures since 1904. This has now all been corrected in the statement attached by charging the Public School Board with all public school expenditures made out of the General funds of the Town, and crediting the Separate School Board with $147.32, the amount improperly levied against their property.

On the 1916 roll the following debentures must be levied for under the heading of " School Taxes," otherwise the ratepayers will not clearly see what their total taxes for school purposes amount to and exempted property will not be paying all the school rates they are entitled to:

Public School Debentures.

B.L. 2, 1904—School site	$183 95
B.L. 271—New building	339 18
B.L. 275—New building	1,092 45
B.L. 293—New building	2,694 68
	$4,310 26

Collegiate Institute Debentures.

B.L. 139	$346 98
B.L. 259	203 49
B.L. 272	218 49
	$768 96

Cemetery.

In 1910 additional land for cemetery was purchased from Thos. Rogers for which a note was given for $1,500.00 for one year at 5 per cent. Each year since the interest has been paid and a new note given, in 1913 the rate of interest was raised to 6 per cent. No entry except for the payment of interest has been made in the Treasurer's books for this transaction. A new note was made Nov. 1, 1915, for one year. This is included in the statement of liabilities in this report.

The Council have no authority to give notes for any purchases for which they do not make provision for payment in the roll of the current year.

Since the additional land was purchased for the Cemetery there has been realized from sales of cemetery lots much more than the amount of this note. These amounts have been absorbed into the General funds of the Town, but the liability of $1,500.00 has not been met, but carried from year to year by renewal.

During the past few years a number of owners of lots in the Cemetery have commuted by lump sum payment for perpetual care of their lots, the Town has

absorbed the amounts so commuted and has guaranteed the lot owners who commuted to care for the lots perpetually.

The $1,500.00 must be treated as a debt of the Town and the amount provided for and paid in 1916.

The Cemetery cannot be considered an asset of the Town as it could not be disposed of to satisfy any indebtedness.

There must be surplus Cemetery lands owned by the Town, as part of the Cemetery property is leased annually for pasture.

A proper record of all sold and unsold lots should be recorded both in the Treasurer's office as well as the Cemetery Superintendent's office.

Public School Board.

The accounts of the Public School Board have been audited and attached is a statement of the standing of the affairs as of December 31, 1915.

A statement is also given of money spent in connection with new school building and equipment.

The debentures issued for school site in 1904 have annually been paid out of the general funds of the Town instead of being paid by Public School supporters only. The Clerk at that time should have levied against the public school supporters in a special column for Public School debenture debt the amount necessary to pay the annual amount. The present Clerk has followed the same method as his predecessor. All sums paid out of the general funds for Public School purposes have been charged in the attached statements and credit has been given for all Public School taxes levied on the rolls. The amount the Public School Board are overdrawn beyond what has been levied for must be included in the tax roll of 1916 against Public School supporters only, unless the amount which the new school cost over debentures issued is provided by issues of debentures.

In the annual receipts of the Board there is an item from the Township of Blanchard, which the Officials did not know how this item was arrived at. The Clerk of Blanchard Township was communicated with in regard to an Agreement or Award in connection with Blanchard ratepayers who are attached to the Urban School of St. Mary's. He has been Clerk for over twenty years and during that time no Agreement or Award has been made. For many years these ratepayers have only been taxed with two mills annually for School purposes which amount has been paid over to St. Mary's Public School Board.

The Board should communicate with the inspectors of the Schools in Blanchard and St. Mary's and take immediate steps to remedy the present conditions. The Blanchard ratepayers have been paying about $8.00 per year each scholar, while the cost to St. Mary's for 1915 was nearly $20.00 per pupil.

The Town is holding $2,000.00 cash in a special account for the Board for repairs to the West Ward School; this was raised by debentures.

The Board were short of funds at the end of the year by reason of the fact that they actually paid out of their general account nearly $4,000.00 on new school grounds and equipment.

There is $20,000.00 insurance on the new school building and contents and $2,000.00 on the West Ward School building and contents. It would be well for the trustees to go carefully over these, as the insurance rate is low and the tax rate for schools is so high that the risk of fire increasing them should be reasonably guarded against.

The Public Schools are an asset of the Public School supporters and the Public School debentures are a liability of the Public School supporters only, although they are issued by the Municipality which guarantees them.

Properties cannot be exempted from taxes for payments for Public School debentures, these are just as much a Public School tax as the yearly amount requisitioned for by the Board to pay teachers, etc.

The question of Blanchard ratepayers attached to the St. Mary's Public School, as well as the finances of the Board, has been discussed with the Board and later with the members of the Finance Committee. It was suggested that as the Public School rate to cover the overdraft and debenture rate for 1916 as well as provide funds for running the schools for 1916 would require nearly 10 mills, it would be wise to issue debentures for $3,000.00 for ten years to cover the overdraft caused by expenditures on new school over amount raised by debentures, and in that way the Public School rate for 1916 would not be so burdensome.

Collegiate Institute Board.

The accounts of the Board have been audited, and the fees from pupils carefully checked with the records kept by the Principal.

There is $20,000.00 insurance on buildings and contents, particulars of which are detailed in this report, and $3,000.00 on Gymnasium and contents.

In order that the ratepayers should know how much they pay for school taxes the amount levied for to pay debentures annually for the Collegiate Institute should be levied with the trustees requisition under the heading of Collegiate Institute, the amount raised for the payment of debentures to be credited to debenture redemption account, and the amount raised on trustees' requisition only to be placed to the credit of the Board when the tax roll is completed and the Treasurer charges the Collector with the total of the roll.

R. C. Separate School Board.

The Secretary-Treasurer's Cash Book has been audited the same as all other books of public institutions to which ratepayers of the Municipality contribute through their taxes.

The Separate School supporters have contributed during the years 1904 to 1914, inclusive towards the Public School debenture issued to buy additional school lands. The amount due the Separate School Board is $147.32, which has been placed to the credit of the Board and can be drawn on application to the Council.

Fines.

It has not been customary to furnish the Treasurer with the names of persons from whom fines have been collected so they could be entered in the Treasurer's Cash Book.

The absence of names makes it difficult to check the Police Magistrate's record book with the Treasurer's Cash receipts. In future, the names of persons on whom fines have been imposed should appear in the Cash Book and the Magistrate should get a receipt in every instance. It would be better for the Treasurer to

enter the date and amount received in each case in the Magistrate's Record Book and sign for the amount there. In that way a permanent record would be kept. These fines do not seem to have been audited in previous years.

St. Mary's Wood Specialty Co., Limited.

Loaned by the Town under By-law 85, in 1908, $6,000.00, interest payable yearly, $1,200.00 principal to be repaid Dec. 15, 1913, 1914, 1915, 1916 and 1917. On Dec. 31st, 1915, $3,600.00 of the principal should have been repaid. No principal payments have been made. The delay in payment was taken up with the management, also that no insurance policies were in the hands of the Town as security. Policies have now been placed in the Treasurer's vault for a total of $4,500.00; loss, if any, payable to the Town. The insurance should be maintained till repayment is made to the Town.

Under the circumstances it seems as if it would be injudicious to force payment at the present time.

Local Improvements.

Sidewalks have been constructed as local improvements under by-laws by which the property owners only contribute 25 per cent. of the cost, the balance being a general tax from which the farm lands are exempt.

The only other local improvement tax is for curb and gutters on Queen Street.

There is no system of drainage in the Town.

St. Andrew's ditch was constructed under an award of the engineer which was passed on by the Judge.

Street oiling has been charged for on the basis of assessment. The Clerk stated that this is the manner in which it was done in other places he had enquired from. The Local Improvement Act, however, in Sub.-sec. 1, Sec. 49, Chapter 192, R.S.O. 1914, states that:—

"The Council may by by-law provide that thereafter the annual cost of cleaning, clearing of snow and ice, watering, oiling, sweeping, lighting, light supplied in excess of that supplied at the expense of the Corporation at large, cutting grass and weeds and trimming trees and shrubbery on any street, or any one or more of such services shall be specially assessed upon the land abutting directly on such street *according to the frontage thereof,* and the foregoing provisions of this Act shall not apply to such service."

Water, Light and Heat Commission.

There has been considerable discussion from time to time as to the results of the two departments over which this Commission presides.

Misunderstandings have been occasioned by the printed audit reports not containing a plain statement of the operating cost and revenue of the Water Department, and the Electric Light Department, showing the profit or loss and the amount of capital expenditure. Accompanying this report are profit and loss statements of each department for the year 1915, also the amount of the profit or loss for the past three years.

The Commission combines the Water Department and Electric Department which are operated under two different Acts, the Water under the Municipal Act, the Electric under the Power Commission Act.

The Waterworks operated under the Public Utilities Act which provides that funds for plant extension shall come from debenture sales and any surplus from operation shall be turned over to the Town Treasurer, to be placed to the credit of the utility work, and if not required for purposes of work shall form part of the general funds of the Corporation, Sec. 43, Chap. 204, R.S.O. 1914. In St. Mary's the Waterworks is operated for the benefit or detriment of the Municipality at large, and not for consumers only. Rates should be fixed to make it self-sustaining after assuming its portion of fixed charges on debentures yearly.

The Electric Department operated under the Power Commission Act requires that all the fixed charges on Hydro debentures be paid out of revenue so that the burden will fall on users only. The Act provides that any surplus from operation shall remain in the department and may be used for maintenance, extensions, etc.

The electrical rates produce a profit after paying all operating and fixed charges.

The water rates for years have occasioned a loss annually to the Town. To avoid the necessity of the Municipality paying for losses the operating expense must be reduced or the revenue materially increased by revision of the rates.

Adjusting entries to reconcile the bank accounts have been made out.

The accounts of customers are closely looked after.

The waterworks and electric light fixed assets appear in the attached statements of the Municipality at the figures which they appear in the books of the Commission.

A statement of the insurance on the plant, etc., appears in Schedule 17. There is no insurance on material, supplies, etc., in the basement of the Town Hall.

Water Department.

This department is not paying its way. Since 1911 it has been charged with the full amount of the debenture and interest maturing each year paid by the Town. The revenue is not sufficient to meet the operating charges including debenture principal and interest at the present rates that are charged the water users.

Large capital outlay has been made in the past six years without producing revenue sufficient to prevent a loss.

The by-law fixing the rates has not been revised for years. It should be carefully gone into and rates fixed sufficient to prevent further loss. In St. Mary's it is not customary to charge property on streets on which there are water mains when not water users. Property that is benefited by having a water main in front of it should contribute to the annual cost of upkeep of the plant. The Act provides for this and it is done in other places and has produced favourable results. Sec. 15, Chap. 204, R.S.O. 1914.

Each year the Water Department Town account is credited with the amount of annual debenture and interest and charged with the amount of service for hydrants and street watering furnished the Town, the balance being paid by the general taxpayers. This also applies to the Electric Department. In 1915, the Town paid $8,260.20 debenture and interest for the Commission and got from them $6,806.66 in water and light service, the balance of $1,453.54 was paid out of the general funds of the Town.

The statement showing the amount spent in improvement of Water plant

giving the particulars of where the money came from, should point out very clearly the necessity of an immediate revision of the water rates. The users of water and those with property on streets where there are mains should contribute a sufficient amount in the rates to make the Water Department self sustaining.

The capital expenditures of Water Department and water losses to Dec. 31, 1915, after crediting previous debenture issues, absorbs all of the 1915 issue of debentures, $12,550.00 except $171.92, the details of this are shown in Schedule No. 9.

The importance of making the Water Department self-supporting cannot be drawn too strongly to the attention of the Commission as well as the ratepayers.

Electric Light Department.

The attached statements of Profit and Loss, Assets and Liabilities with comparative statements show the results of the past three years.

The capital outlay has very much increased in three years.

Depreciation in this department is written off at the rate of 5 per cent. annually which is ample when the amount of debenture principal paid each year is taken into account.

The amounts standing to the credit of the Town in the Electrical Department, $790.59 on capital account, and $4,314.15 debenture principal and interest paid by the Town charged to Operating account and credited the Town since Hydro was installed, are liabilities of the Commission to the Municipality, and before the Commission can pay these amounts the Municipality must reimburse the Electrical Department for the amount of electrical profits, etc., that has been expended on capital account of Water Department over what was provided by the issue of debentures.

The Clerk.

It never has been my experience before to find minutes so well recorded and so carefully kept.

The tax rolls are carefully and accurately prepared and correctly made out, with the exception that all school taxes do not appear in School columns of any of the tax rolls since 1904 and for this the present Clerk is not to blame. It is very difficult to check the local improvement levies on the rolls owing to the surveys in St. Mary's and the same property being subject to two different descriptions.

The by-laws are all carefully recorded in a special book for that purpose.

All warrants for payments are signed by the Clerk and Mayor and when countersigned by the Treasurer are payable at the Bank.

The manner of treating arrears of taxes on the tax rolls has been explained to the Officials during this audit.

When the Collector makes his final return of the tax roll to the Treasurer he must also furnish the Clerk with a list of lands against which taxes have been returned unpaid, and it is the duty of the Clerk to notify each ratepayer that taxes have been returned unpaid against the property. This has never been done in St. Mary's, had it been done some taxes now in arrears would have been paid. As a result of notices sent out during this Audit the taxes have since been paid on nineteen properties previously in arrears.

The Treasurer.

It has been customary to keep special bank accounts as directed by the Finance Committee for bridge, sidewalk, curb and gutter, sale of debentures and for St. Mary's & W. O. Ry. sinking fund, without these transactions appearing in the Cash Book up to Dec. 31, 1914. During this Audit all cash transactions of the Municipality for the year 1915 have been entered in the Cash Book for that year.

No ledger has been in use to record the transactions and show the standing of the different accounts of the Municipality. The absence of a ledger was endeavoured to be overcome to some extent, by the numerous bank accounts the transactions of some of which did not appear in the Municipal Cash Book.

The Treasurer has no authority to pay out more than what is appropriated for any committee.

On the completion of the tax roll the Clerk should furnish the Treasurer with the figures in writing so an entry can be made in the Journal charging the Collector with the total roll and crediting the various School Boards, etc., with the amounts levied for them.

The Act in reference to arrears of taxes does not seem to have been understood by the Officials. The arrears of tax record book should only contain taxes returned against lands. A new record book has been opened and only such arrears as are against lands are entered. Each year before the tax roll is made the Treasurer should make a statement and give it to the Clerk of such taxes on lands as are subject to sale for taxes that year, that the Assessor has certified as occupied and the Clerk should enter these arrears of taxes only on the roll for the year and add them in with the current taxes of the year against the description of property.

The Treasurer's Cash Accounts were accurate to a cent and with a ledger now in use there should be no difficulty in the affairs of the Town being properly recorded in the future.

Licenses.

On May 1st by the vote of the ratepayers the Town will cease to derive revenue from hotel licenses which has been a source of revenue in the past, this together with the reduction in assessment on hotel property will considerably increase the general rate of taxes of the Town. This will not be contributed to by the farm property of over 25 acres as under the Act of 1895, their general taxes are limited to 3½ mills and is another argument why the Act should be revised to meet the present conditions.

To meet this shortage there are sources of revenue that the Town might increase which are sources of revenue in other places. There is now only one pool and billiard license. The revenue might be increased by granting others.

Officers' Bonds.

The bonds of the Treasurer and Collector are in order. The particulars of these are given in Schedule 17.

As a Result of This Audit.

The attention of the Council and Officials has been drawn to the fact that in 1913 the Act was repealed which permitted reduction in taxes of farm lands in Towns and Villages of 5 acres and over. The Councils of 1913, 1914 and 1915 illegally continued exempting these properties under 25 acres which caused a loss of taxes for the three years of $1,054.31.

The attention of the Council has been called to the special Act of 1895 exempting from certain taxes farm lands in the Corporation of 25 acres and over which should now be amended. In 1895 they were exempted from 3 mills of general tax, but the conditions have so changed that in 1915 they were exempted from 10.09 mills.

Over $600.00 of tax arrears were collected as a result of notices and personal interviews during this audit.

A clear statement of W. L. & H. Commission Accounts is furnished showing cost of water betterments and annual losses.

The Separate School Board have been credited with amount improperly collected from them on Public School debentures.

The Public School Board have had their attention called to the fact that the ratepayers of Blanchard Township attached to the St. Mary's Public School were not contributing their proper share of school taxes. The Public School Board are charged with debentures and other items paid by the Town which should be paid by the Public School supporters only.

The Treasurer's Cash Book for 1915 has included all Cash transactions of the special bank accounts which were omitted from the Cash book of former years.

The Treasurer has been provided with a ledger opened up to conform with balances as shown in this report and instructed as to how to continue its use in the future.

The financial standing of the Town is shown, including St. Mary's & W. O. Ry. Sinking Fund which did not previously appear as a liability of the Town in published Annual Audit reports.

For 1915, $112.77 of School taxes were recovered which would have been lost to the Town.

More than the cost of this Audit has been lost by the Town during the last three years by the Officials and Members of the Council not knowing of changes in legislation.

A new arrears of tax register has been opened, also a Bills Receivable and Bills Payable book so that a permanent record of all notes will be kept in the future.

Policies of Insurance were procured from the St. Mary's Wood Specialty Co., Ltd., loss, if any, payable to the Town of St. Mary's, for $4,500.00 as additional security for loan secured by mortgage.

Liabilities.

For years the Council of the Town has given notes for purchases which should have been provided on the tax roll of the current year. It is illegal for the Council to buy property for which they do not provide the means of paying for on the tax roll, unless submitted to the ratepayers. The result is that each succeeding Council has burdens of former years thrust on them and they have relieved themselves of it by passing it on to the Council of 1916.

There are notes of the Town renewed from year to year which have not been shown as a liability in the annual statements.

The following notes are outstanding and unpaid:—

Dec. 8, 1914, James Yule, $300.00 at 6 per cent. to pay off the mortgage on Falconer property.

Oct. 29, 1915, D. Duggan, $2,000.00 at 6 per cent. to pay for property on Water St. next to fire hall, used as residence for firemen.

Nov. 1, 1915, Thos. Rogers, $1,500.00 at 6 per cent., purchase of addition to Cemetery in 1910, which has been renewed yearly.

There is $200.00 due to the heir of John Murphy in connection with houses on Water St.

The amount received from Liquidators of Carter Milling Co., $2,000.00, was to be used to meet payment of the Town's portion on Church & Watt, Limited, Opera House debentures payable yearly. This is calculated at 10/27ths of the annual maturity, the balance being paid by the Chartered Trust Co. This $2,000.00 should be in the bank as a sinking fund, but was used to buy the (Flats) Park instead.

The St. Mary's and W. O. Ry. debentures for which, in 1912, $14,000.00 was received from the C. P. R., should have been kept distinctly separate from other funds and only used as the by-law directed, namely, as a sinking fund to help meet the debentures as they matured. This fund was never deposited in a separate account and has been absorbed into the general funds. There should be $10,500.00 in the fund as at Dec. 31, 1915. There is a special bank account ostensibly for this purpose with $3,530.05 to the credit, but the current liabilities exceed the available assets.

The Act in respect to the diversion of sinking funds Sub-sec. 3, Sec. 302, Chap. 192, R.S.O. 1914, reads as follows:—

"If the Council applies any of such money in paying current or other expenditures, the members who vote for such application shall be personally liable for the amount so applied which may be recovered in any Court of Competent Jurisdiction."

All of the above-mentioned liabilities of the Town should be provided for in the levy for 1916 taxes, otherwise the present Council may be held personally liable if they exceed 20 mills general rate and do not include them. Sec. 297, Chap. 192, R.S.O. 1914.

Assets and Liabilities.

All known Assets and Liabilities for which there is any record or account presented are included in the attached statements. There are some liabilities for law costs, interest on 1915 unpaid taxes, etc, the amount of which is not known at the time of making this report.

The Asset from the Water, Light & Heat Commission Electric Department is not included nor is the amount the Town would have to pay the Commission for losses in the Water Department in order to reinstate the amount of debenture money, out of the $12,550.00 issue of 1915, to leave intact the amount to pay for the gasoline auxiliary engine for which funds were raised in the above-mentioned debenture issues.

Financial Position.

Sub.-sec. 2, Sec. 297, Chap. 192, R.S.O. 1914, restricts the Council to a levy of 20 mills for current annual expenditure of the Corporation and the principal and interest of debts.

The General and debenture rate for 1915 was 20.09 mills which included local improvement debentures of which less than $2,000.00 is collected from the property, the balance being paid out of the General funds of the Town.

In 1915, the same as in previous years estimates have been exceeded by Committees and liabilities carried over to the next year until the position is such that the most rigid economy will have to be effected to help the General and debenture rates down to the limit of 2 cents which, if exceeded, prevents the Council from contracting any further debts until the annual rates are reduced to that rate.

Included in the liabilities are notes given by the Town for purchase of additional land for Cemetery, purchases of two lots and house adjoining the fire hall, payment of the mortgage on Falconer property, none of which were provided for in the tax rate of 1915. The Council have no legal authority to purchase or expend money for such purposes as these notes were given for and renew them from year to year. While the transactions may or may not be good business, if not legal, they cannot be justified by the quality of the investment. It is the duty of the Council to limit their expenditures to the amount they provide on the tax roll of the year.

The committees of the Council have not limited themselves to the amounts appropriated; this and the Council's failing to raise sufficient taxes to meet expenditures have resulted in the finances of the Municipality being in the condition as shown in this report.

The annual deficits of the Water Department are a burden to the general taxpayers.

The low rate of assessment on farm lands of 25 acres and over in the Municipality, which under the Act of 1895 are already exempt from over 10 mills of the general rate and do not contribute to the payment of water, light and sidewalks debentures, necessitates the other ratepayers paying heavier taxes than appears fair under the present conditions.

The Council should carefully go over the statement of Available Assets and Current Liabilities and see that in the rates for the year 1916 they provide for the liabilities and expenditures for 1916.

It is true that liabilities of 1910 which should have been met then, have now to be provided for; no Council can legally contract debts for which they do not make provision on the tax roll of the year without the vote of the people.

Because illegal transactions have taken place in the past is no excuse that such things should continue.

On Dec. 31, 1915, the financial position of the Town of St. Mary's shows that the Current Liabilities exceed the Available Assets by $10,212.13. In other words, it would take over five mills of extra taxes to square the Town accounts, and provide for the depleted sinking funds.

General Remarks.

There were transactions and methods of conducting the affairs of the Municipality not in strict accordance with the statutes. The most glaring of these is

the Sinking Funds of St. Mary's and W. O. Ry. in 1912, and the Church & Watt, Limited, $2,000.00 payment by Title & Trust in 1915 on the mortgage securing the debenture issue.

In the first case the money has been absorbed into the general funds, while there is a special bank account on Dec. 31, 1915, with $3,530.05 to the credit as for this special fund, on the same date, however, the general bank account was overdrawn $4,562.13.

In the latter case the money was used to buy the Park (Flats) which no doubt was a good investment for the Town at the price, but that does not justify the illegality of the transaction nor relieve the Council from the liability for diverting debenture sinking funds.

The Council of 1916 should use every means to limit their expenditures and increase their sources of revenue wherever it is possible.

Recommendations.

That the Clerk furnish the Treasurer with a written statement of the appropriations as authorized by the Council, and when the tax roll is completed a written statement of total roll and amounts to go to the credit of School Boards and other accounts as levied for on the roll.

That the Collector make his returns as prescribed in the Act and a duplicate for the Clerk, so that ratepayers can be notified of all taxes returned against lands.

That the Treasurer keep the ledger written up and balanced monthly and notify the Chairman of any committee whose funds become nearly exhausted, to prevent overdrafts.

That the Council confirm the Collector's final settlement of 1915 tax roll when he makes his return and by resolution write off uncollected business or other taxes that cannot be collected or charged against lands.

That unless the cost of this Audit, patriotic funds and any extraordinary expenditures be levied for by a special rate, the farm lands will not contribute anything towards these expenditures. The farm lands paid nothing towards nearly $2,000.00 of the patriotic expenditures in the year 1915.

Conclusion.

It is not considered necessary to furnish any further detailed statements than those that accompany this report.

The financial affairs of St Mary's are such that they should be carefully scrutinized annually by someone experienced in Municipal accounts, who would see that all proper entries were made in the ledger and report to the ratepayers any diversion of sinking funds or other irregularities, and give a clear statement of the standing of the finances of the Town, Water, Light and Heat Commission and the various Boards who receive portions of the taxes annually. Such an examination and report yearly would be less expensive to the Town in the long run than the present system which has entailed the expense of two Government Audits since 1902.

The Officials and all others with whom I have come in contact, have throughout evinced the utmost willingness to assist in the examination and Audit and have rendered substantial assistance from time to time.

The attention of the Council is called to Sec. 15, Chap. 200, R.S.O. 1914, which requires that the recommendations made in this report be carried into effect.

I shall be pleased at any time to furnish further explanations or to advise with the Council or Officials in reference to any of the matters or recommendations contained in this report.

Yours very truly,

A. F. Falls,
F.C.A.

Toronto. Ont.,
February 11th, 1916.

TOWN OF ST. MARY'S.

SCHEDULE NO. 1.

Balance Sheet as at December 31, 1915.

Assets.

Available Assets:		
Cash on hand, Royal Bank	$603 81	
Tax Roll, 1915, uncollected	2,198 06	
Arrears of taxes, estimated value	1,100 00	
Bills receivable, tax sale	258 24	
Collegiate Institute Board	750 00	
Public School Board	3,003 02	
St. Mary's Wood Specialty Co., Ltd., loan payments overdue	3,600 00	
Curb and gutters for steps due from ratepayers	10 50	
Rents due	24 50	
Total available assets		$11,548 13
Fixed Assets:		
Waterworks System	$67,369 43	
Electric Lighting System	78,870 49	
Town Hall	25,000 00	
Collegiate Institute	30,000 00	
Park (Flats)	2,500 00	
Falconer house and lot	850 00	
Water Street houses and lots, $1,400 and $900	2,300 00	
Fire Hall	3,000 00	
Fire appliances, horses, etc.	7,000 00	
Road steam roller, grader, team wagons, etc.	2,500 00	
Lands purchased by town for taxes	325 00	
Total fixed assets		219,714 92
Passive Assets:		
Sinking Fund, Prov. Treas., on debentures	$8,151 58	
St. Mary's Wood Specialty Co., Ltd., mortgage securing debentures	2,400 00	
Church & Watt, Ltd., mortgage securing debentures	3,400 00	
Public School debenture principal unpaid	58,238 61	
Ratepayers portion of Local Improvement Debentures:		
By-law 174, 14 years, $80.16 each	1,122 24	
By-law 191, 25 years, $237.06 each	5,926 50	
By-law 217, 26 years, $379.39 each	9,864 04	
By-law 308, 9 years, $117.43 each	1,056 87	
Total passive assets		90,159 84
		$321,422 89

Investments not realizable to meet liabilities, not included as assets:

Wellington Street bridge, estimated	$5,500 00
Water Street " "	2,500 00
Park Street " "	2,500 00
Church Street " "	5,000 00
Queen Street " "	10,000 00
Sidewalks Estimated	37,500 00
	$63,000 00

Cemetery or Carnegie Library cannot be properly included as Assets.

Liabilities.

Current Liabilities:			
Public School Board for West Ward School		$2,000 00	
R.C. Separate School Board, portion collected for Public School Debentures in error 1904 to 1914		147 32	
Tax Collector's Salary, 1915		150 00	
Police Magistrate's Salary December		20 83	
Inmate Home for Incurables (since paid)		496 00	
Local Improvement levies collected 1915:			
Debentures due 1916.			
By-law 174	$80 16		
By-law 191	237 06		
By-law 217	379 39	696 61	
Bills Payable:			
T. Rogers, *re* Cemetery	$1,500 00		
D. Duggan, *re* Water Street Houses	2,000 00		
J. Yule, *re* Falconer Property	300 00		
Royal Bank, advance Public School Bd.	1,000 00		
Royal Bank, advance Coll. Inst. Bd.	750 00	5,550 00	
Amount due heirs John Murphy, *re* Water St. Houses		200 00	
St. M. & W.O. Ry. Sinking Fund		10,500 00	
Church & Watt, Ltd., Sinking Fund		2,000 00	
Total Current Liabilities			$21,760 76
Deferred Liabilities:			
Public School Debenture, Principal Unpaid		$58,238 61	
Town of St. Mary's Debenture, Principal Unpaid		201,573 72	
Church & Watt, Limited, Debenture, Principal Unpaid, Guaranteed by Town of St. Mary's		4,500 00	
Total Deferred Liabilities			264,312 33
Surplus Assets exceed Liabilities			35,349 80
			$321,422 89

The amount due from ratepayers on Local Improvements to meet debentures, also what is secured by mortgage as well as Public School debentures, collectable from Public School supporters only is included under the head of Passive Assets Contra.

Current Liabilities	$21,760 76
Available Assets	11,548 13
Deficit	$10,212 63

SCHEDULE NO. 2.

Abstract Statement of Receipts and Disbursements, 1915.

Receipts.

1914.			
Dec. 31. Balance in Bank			$2,792 85
On 1915 Tax Roll		$58,899 92	
Arrears of Taxes		1,725 40	
Poll Tax		48 00	
Dog Tax		114 00	
Rents		142 50	
Fines		299 00	
Licenses		1,426 25	
Debentures		68,240 60	
Debenture, Principal and Accrued Interest		465 06	
Cemetery		975 00	
Board of Works		16 00	
Loans		46,100 00	
Wood Specialty Company, interest		300 00	
Water, Light and Heat Com.		6,806 66	
Church & Watt, Debenture		659 74	
Miscellaneous		3,230 22	
			189,448 35
			$192,241 20

DISBURSEMENTS

Municipal Government		$ 2,365 00	
Administration of Justice		550 00	
Water Street Houses		2,108 31	
Grants		1,385 00	
Salaries		1,483 96	
Printing and Stationery		901 20	
Patriotic		4,864 18	
Cemetery		1,061 76	
Insurance		137 05	
Law Costs		1,034 61	
Loans Paid		88,150 00	
Interest		1,333 15	
Board of Works		4,678 63	
St. Andrews Drain		1,202 65	
Curbs and Gutters		510 96	
Market, Fire and Police—			
Fire	$1,178 93		
Market	887 34		
J. Alberts	636 00		
Police	1,369 35		
		4,071 62	
Assessment		607 64	
Relief		1,667 43	
Board of Health		433 01	
Street Oiling		1,347 82	
Debenture Principal		8,974 79	
Debenture Coupons and Interest		8,941 83	
Debenture Sinking Fund		2,623 82	
Public School Board, *re* New School		10,793 00	
Public School Board Current Rates		11,568 55	
Collegiate Ins. Board		7,415 00	
R. C. Separate School Board		920 40	
Water Light and Heat Board		19,356 66	
Miscellaneous		1,149 36	
			191,637 39
1915.			
Dec. 31 Balance at Credit in Bank			603 81
			$192,241 20

DETAILS OF RECEIPTS, 1915.

1914.			
Dec. 31	Balance on hand		$2,792 85
	Collector of Taxes, on 1915 Roll		58,899 92
	Arrears of Taxes		1,725 40
	Poll Taxes		48 00
	Dog Taxes		114 00
	Rents—		
	Market stall and hall	$74 50	
	Water St. houses, Dec., 1915	18 00	
	Scales	50 00	
			142 50
	Fines		299 00

Licenses.

1915.		
Jan. 9	A. H. Switzer, selling meat, year	$15 00
" 11	J. White, billiards, 1 month	6 00
Feb. 10	F. Marshall, cigarettes, 3 months	10 00
"	F. H. Smith cigarettes, 3 months	10 00
" 13	L. Mahomet	7 00
" 20	C. W. Robinson, auctioneer, 1 day	2 00
Mar. 15	J. White, billiards, 2 months	12 00
	R. A. McDonald, 1 day	2 00
" 31	J. White, billiards, 1 month	6 00

Apl. 29	J. Simms, billiards, May 1, '15, to Apl. 30, '16	72 00	
" 30	W. L. Mossip, auctioneer, 1 day	2 00	
May 1	C. F. Meyers, auctioneer, 1 year	12 00	
	T. Roper, dray, 1 year	6 00	
" 3	H. Thomas, restaurant, 1 year	1 00	
	A. Vongnass, restaurant, 1 year	1 00	
	Q. Lee, restaurant, 1 year	1 00	
	A. H. Smith & Co., cigarettes, 3 months	10 00	
	W. Horten, dray, 1 year	6 00	
	J. Cousins, draying, etc., 1 year	10 00	
	G. Skippell, draying, etc., 1 year	16 00	
	D. E. Brown, team, 1 year	10 00	
" 4	G. Monnell, dray, 1 year	10 00	
	T. Gleason, dray, 1 year	20 00	
	C. Dickinson, dray, 1 year	10 00	
	J. Tait, dray, 1 year	10 00	
	W. Galbraith, dray, 1 year	10 00	
" 8	C. W. Coupland, auctioneer, to May 1, 1916	12 00	
" 13	M. Stevens, teams, 1 year	20 00	
" 20	F. Marshall, cigarettes, to July 31, 1915	10 00	
	Liquor Licenses	568 00	
June 9	Lee Don, laundry, May 1, 1916	1 00	
" 14	B. Taylor, transient	2 00	
" 16	C. Wilson, fish, 1 year	5 00	
Aug. 13	John Gray, theatre, 1 year	25 00	
" 16	F. Marshall, cigarettes, Oct. 31, 1915	10 00	
" 27	F. H. Smith, cigarettes, Oct. 31, 1915	10 00	
Sept. 6	Bowling alley, 1 day	3 00	
" 27	Dr. Whitcloud, transient	3 00	
Oct. 26	Tony Veron, peanuts, Nov. 1, 1916	40 00	
Nov.	Liquor Licenses	395 25	
" 20	F. Marshall, cigarettes, Jan. 31, 1916	10 00	
	F. H. Smith, cigarettes, Jan. 31, 1916	10 00	
" 15	W. Proven, picture show, May 1, 1916	25 00	
			$1,426 25
	Debentures.		
	B.L. 303, Water, Light and Heat Board	$12,550 00	
	B.L. 308, Curb and Gutters	1,000 00	
	B.L. 293-4-5, Public School	54,690 60	
			68,240 60
	Accrued Interest and Principal.		
	B.L. 303	$274 44	
	B.L. 293-4-5	190 62	
			465 06
	Cemetery.		
	Graves and care of lots	$273 00	
	Sale of lots	560 00	
	Rent of pasture, etc	142 00	
			975 00
	Board of Works		16 00
	Loans.		
Jan. 15	Royal Bank	$10,000 00	
Mar. 4	" "	2,000 00	
Apl. 7	" "	1,300 00	
" 29	" "	5,000 00	
May 4	" "	1,250 00	
June 8	" "	5,000 00	
" 8	" "	3,100 00	
" 16	" "	2,000 00	
July 6	" "	1,000 00	
Aug. 3	" "	2,200 00	
" 16	" "	5,000 00	
Oct. 19	" "	1,500 00	
Dec. 29	" "	1,000 00	
" 29	" "	750 00	

Jan. 2	A. Carman	3,000 00	
Oct.	D. Duggan	2,000 00	
			46,100 00
	Church & Watt debenture		659 74
	Wood Specialty Co., three notes $100 each, discounted		300 00
	Water, Light and Heat Com., account of debentures		6,806 66
	Miscellaneous—		
	Interest P. School debenture funds in bank	$723 57	
	Interest Wood Specialty Co	2 25	
	Title and Trust on Opera House mortgage	2,000 00	
	F. Young	4 75	
	Rebates of interest	42 35	
	Ontario Government Ry. Tax 1912, 1913, 1914	124 52	
	Water Street houses, old porch sold	6 00	
	Title and Trust, garnishee	50 00	
	Children's Aid Society	1 00	
	G. Hamilton, refund	18 50	
	Interest on Special Account No. 1	86 51	
	Dr. Smith	1 00	
	Curbs and gutters	143 52	
	St. Andrew's ditch	26 25	
			3,230 22
			$192,241 20

Detail of Disbursements, 1915.

Municipal Government.

Jan.	Election expense	$32 00	
	W. Andrews, clock, 1914	40 00	
	F. E. Butcher, flats	2,000 00	
	Ont. Ry. and Mun. Board	15 00	
	" " " "	10 00	
	Jurors' lists	18 00	
	A. F. Falls, Acc. Government audit	250 00	
			$2,365 00

Administration of Justice.

	Paid County of Perth		550 00

Town of St. Mary's.

Water Street Houses.

	Mrs. M. A. Scholfield, purchase	$977 74	
	James Patterson, repair	500 00	
	" " "	350 58	
	A. Willard, repair	49 75	
	Wilson Bros., repair	46 66	
	Treacey & McIntyre, repair	6 00	
	J. Willard, repair	140 00	
	L. Haristone, law costs	13 65	
	J. M. Adam, supplies	23 93	
			2,108 31

Grants.

	Sick Children's Hospital	$10 00	
	Public Library Board	800 00	
	Children's Aid Society	75 00	
	South Perth Agricultural Society	250 00	
	Maxwell Band	125 00	
	Kiltie Band	125 00	
			1,385 00

Salaries.

	T. M. Clark, Clerk	$650 00	
	Miss M. E. Long, Treasurer	400 00	
	Miss A. M. Waring, Stenographer	150 00	
	Postage Clerk and Treasurer	34 00	
	Police Magistrate, G. D. Laurie	249 96	
			1,483 96

Printing and Stationery.

Feb.	M. J. Davey	$8 50	
Mar.	" "	17 50	
Apr.	*St. Mary's Argus*	68 75	
	" *Journal*	173 50	
	" "	70 50	
	" *Argus*	31 00	
June	M. J. Dewey	23 00	
July	*St. Mary's Argus*	20 00	
Aug.	" *Journal*	60 50	
	A. Willard	3 60	
	St. Mary's Argus	48 00	
	" *Journal*	104 75	
Sept.	" *Argus*	12 75	
Oct.	" *Journal*	16 15	
Nov.	" "	7 50	
Dec.	" *Argus*	37 00	
	" "	187 20	
	" *Journal*	11 00	
			901 20

Patriotic.

Mar.	St. Mary's Patriotic Association	1,000 00	
Jan.	J. W. Duncan, Insurance, Soldiers	48 40	
Feb.	" " " "	187 50	
Mar.	" " " "	46 61	
	" " " "	51 90	
Apr.	Dr. A. Primrose, Medical Faculty Hospital	100 00	
	Mrs. Sparks, Woman's Pat	50 00	
May	Wm. Andrews, watch, Miss Telferd	35 00	
Aug.	Can. Pat. Fund	300 00	
Sept.	" " "	150 00	
	Entertainment 34th Regt.	212 95	
Oct.	J. W. Duncan, Insurance, Soldiers	239 02	
	Can. Pat. Fund	150 00	
	W. Andrews, pins, engraving, etc	53 84	
Nov.	Can. Pat. Fund	150 00	
Dec.	" " "	150 00	
	Provincial Treasurer, War Tax	1,938 96	
			$4,864 18

Cemetery.

Wm. Barrett, caretaker	$550 00	
A. Fulbigg	3 00	
A. Brereton	33 70	
A. Bodfield	2 00	
S. Hosago	290 40	
I. Corbett	2 00	
F. Fulcher	7 00	
J. Fulcher	6 75	
J. Furness	34 62	
J. Russell	75 13	
D. Cousins	3 00	
A. Volker	1 00	
Thos. Carr	1 50	
I. Pierson	1 00	
H. Downey	20 50	
Maxwells, Limited	5 80	
St. Mary's Hdwe. Co	22 86	
H. Pulleyblank	1 50	
		1,061 76

Insurance.

Feb.	L. D. Stanley, Firemen, Insurance	$48 00	
	Miss M. E. Long, Town Hall, Insurance	16 20	
	" " " " "	8 10	
	L. D. Stanley, fire horses insurance	6 50	
	" " fire hall insurance	3 30	
	A. Carman, Water St., houses insurance	3 65	
	L. D. Stanley, Town Hall insurance	10 80	
	" " " "	27 00	
	A. Carman, Town Hall insurance	13 50	
			137 05

Law Costs.

F. Atkins, witness fees, T. White	$0 50	
C. Stewart, witness fees, T. White	50	
H. Frank, witness fees, T. White	50	
F. G. Sanderson, witness fees, Ford case	1 50	
J. Spearin, witness fees, Ford case	1 50	
F. M. Clark, witness fees, Ford case	1 50	
W. H. Pullyblank, witness fees, Ford case	1 50	
P. T. Coupland, witness fees, Ford case	1 50	
Robertson & Conglin, Ford case	92 10	
" " " A. W. Ford	387 15	
" " " balance, Ford case	22 42	
R. Sheppard, appeal costs, White	1 90	
A. C. Parkinson, law costs	37 39	
L. Haistone, *re* flats	15 75	
F. Young	2 00	
Witness fees	27 80	
J. C. Mackins, payment on account	150 00	
Witness fees	39 10	
J. C. Mackins, Acc. costs	150 00	
Robertson & Conglin, Rice vs. St. Mary's	100 00	
		1,034 61

Loans Paid.

Aug.	Royal Bank	$10,000 00	
	" "	2,000 00	
	" "	5,000 00	
Oct.	Miss Mitchell	1,000 00	
Dec.	Royal Bank	1,300 00	
	" "	5,000 00	
	" "	1,500 00	
	" "	5,000 00	
	" "	2,200 00	
	" "	1,000 00	
	" "	3,100 00	
	" "	1,250 00	
	" "	2,000 00	
	H. Irvine, for new schoool	600 00	
	J. Dickenson, for new school	1,800 00	
	M. A. Rumsay, " " "	1,000 00	
	B. Irvine, " " "	900 00	
	S. C. Bartlett, " " "	4,000 00	
	Mrs. Sparks, " " "	3,000 00	
	S. E. Tumbell, " " "	6,000 00	
	J. E. McNunsel, " " "	2,000 00	
	I. O. O. F., " " "	1,000 00	
	John Turnbull, " " "	2,000 00	
	D. Duggan, " " "	6,000 00	
	G. W. Dawson, " " "	7,000 00	
	D. Duggan, " " "	3,500 00	
	Mrs. M. Duggan, " " "	3,200 00	
	D. Duggan, " " "	2,800 00	
	A. Carman, " " "	3,000 00	
			88,150 00

Discount and Interest on Loans, Overdraft, Etc.

1915.			
Jan. 14	Royal Bank discount on $10,000.00	$355 10	
" 31	" " interest	90	
Mar.	" " discount	90 40	
	" " interest	2 25	
Apl.	" " discount	52 60	
	" " "	92 05	
	" " interest	6 05	
May	" " discount	45 55	
June	" " "	160 30	
	" " "	98 90	
	" " "	61 50	
July	" " "	27 30	
Aug.	" " "	50 25	
	" " "	97 00	
	" " interest	1 35	
Oct.	" " discount	14 30	
	Interest overdraft	1 45	
	Interest on Miss Mitchell's note	60 00	
Dec.	" J. Yale's note	18 00	
	" overdraft	3 85	
	" " January, 1915	4 05	
	" J. Rogers' note	90 00	
			$1,333 15

Board of Works.

Jan.	F. O. Canfield	$2 60	
	D. C. Baird, snow plowing	13 60	
	H. Kelly, two loads of sand	1 50	
	Mrs. E. Bunt, hay	14 42	
	W. Levy, oats	13 65	
Feb.	R. Clark, oats	53 94	
	W. W. Skinner, hay	16 20	
Mar.	D. C. Baird, snow plowing	10 60	
	St. Mary's Hdwe. Co	3 85	
	G. Marriott, hay	13 79	
Apl.	W. Hodgson, work on culvert	5 00	
	F. O. Canfield, tile	37 50	
	St. Mary's Milling Co	2 80	
	F. Standeaven, Jr., dump wagon	175 00	
May	R. Fitzsimmons, assisting Mr. McEvoy	3 00	
	J. W. Corbett, account for hay	14 14	
	Maxwell's, Ltd.	2 75	
	T. W. Lucas, account for harness	48 45	
June	F. O. Canfield, account for tile	26 78	
	W. Freshney, livery	4 00	
	C. Richardson & Co.	10	
	John Dunbar, account for tile	55 00	
	D. C. Baird, account	1 47	
	Wilson Bros.	75	
July	Wilson Bros.	75	
	St. Mary's Hdwe. Co.	4 18	
	F. O. Canfield, tile	23 20	
	C. Richardson & Co., account	16 69	
	A. C. Wood, duty on blade	3 00	
Aug.	Grand Trunk Ry. Co., freight on grader blade bit	51	
	D. C. Baird, account	50	
	Thames Quarry Co., stone, teaming, etc	619 80	
	F. O. Canfield, account	6 03	
	J. M. Adam, account	15 83	
	Western Wheeler Scraper Co	8 00	
Sept.	C. Richardson & Co	1 00	
	L. D. Stanley, insurance	50 00	
	C. Richardson & Co., account	3 00	
	T. Raper, account	10	
	F. O. Canfield, account for tile	7 06	
	Knox Church, repairing sidewalk	7 50	

Oct.	C. Richardson & Co., account for grates	3 60
	J. Armstrong, account for coal	10 80
	Jos. Patterson, work on Elizabeth and Peel Streets	173 40
	F. O. Canfield, tile	12 75
	John Gibb	12 00
	St. Mary's Hardware Co.	2 99
	S. Forman, account for tile	2 50
	H. R. McEvoy, surveying Water Street	12 00
Nov.	Jos. Patterson, repairing walks	7 80
	T. W. Lucas, account	4 00
	M. Stevens, hay	1 68
	Jos. Patterson, account for sidewalks	43 85
	M. Stevens, hay	13 58
	A. Deviney, account for hay	15 54
Dec.	Wilson Bros., account	50
	J. M. Adam, account	6 41
	W. Robson, account	35
	F. O. Canfield, account for tile	59 70
	P. Bradshaw, account	6 70
	A. Berryhill, oats	20 67
	John Ellis	23 40
	St. Mary's Hardware Co.	2 64
	F. O. Canfield, account	11 50

Pay Sheets.

Jan.	Pay Sheet No. 1	11 80
	Pay Sheet No. 2	24 20
	Pay Sheet No. 3	8 00
	Pay Sheet No. 4	13 60
	Pay Sheet No. 5	8 00
Feb.	Pay Sheet No. 6	15 60
	Pay Sheet No. 7	16 20
	Pay Sheet No. 8	12 00
	Pay Sheet No. 9	22 00
Mar.	Pay Sheet No. 10	10 00
	Pay Sheet No. 11	28 00
	Pay Sheet No. 12	56 00
	Pay Sheet No. 13	58 50
Apr.	Pay Sheet No. 14	12 00
	Pay Sheet No. 15	12 00
	Pay Sheet No. 16	18 50
	Pay Sheet No. 17	82 98
May	Pay Sheet No. 18	109 48
	Pay Sheet No. 19	101 95
	Pay Sheet No. 20	120 50
	Pay Sheet No. 21	104 43
	Pay Sheet No. 22	104 98
June	Pay Sheet No. 23	107 67
	Pay Sheet No. 24	109 61
	Pay Sheet No. 25	111 02
	Pay Sheet No. 26	101 36
July	Pay Sheet No. 27	76 25
	Pay Sheet No. 28	91 48
	Pay Sheet No. 29	73 19
	Pay Sheet No. 30	111 08
	Pay Sheet No. 31	73 69
Aug.	Pay Sheet No. 32	65 28
	Pay Sheet No. 33	65 72
	Pay Sheet No. 34	68 94
	Pay Sheet No. 35	66 20
Sept.	Pay Sheet No. 36	72 10
	Pay Sheet No. 37	54 80
	Pay Sheet No. 38	58 49
	Pay Sheet No. 39	39 94
Oct.	Pay Sheet No. 40	32 46
	Pay Sheet No. 41	36 62
	Pay Sheet No. 42	35 23
	Pay Sheet No. 43	68 97
	Pay Sheet No. 44	42 37

Nov.	Pay Sheet No. 45	33 87	
	Pay Sheet No. 46	46 24	
	Pay Sheet No. 47	54 76	
	Pay Sheet No. 48	71 49	
Dec.	Pay Sheet No. 49	52 66	
	Pay Sheet No. 50	46 84	
	Pay Sheet No. 51	25 00	
	Pay Sheet No. 52	12 00	
	Pay Sheet No. 53	23 50	
	John Ellis	20 35	
	Jas. Ogglesby	12 18	
	J. Bannerman	4 00	
	J. M. Miller	5 00	
	S. J. Conlay	12 40	
	D. C. Baird	1 25	
	Geo. Hammond	2 00	
	G. H. Monnell	5 50	
			$4,678 63

St. Andrew's Drain.

J. Patterson	300 00	
" "	750 00	
John Rogers	106 00	
T. M. Clark	20 40	
Refunded	26 25	
		1,202 65

Curbs and Gutters.

M. Stevens	118 99	
J. Patterson	248 45	
" "	21 00	
" "	65 52	
" "	24 49	
M. Stevens	32 51	
		510 96

Market, Fire and Police.

Fire:—

Jan.	W. L. & H. Board, light for December	5 88	
	Wm. Moyes, salary for January	8 33	
	W. L. & H. Board, water for 3 months	1 79	
Feb.	J. Armstrong, coal account	34 23	
	Wm. Moyes, salary	8 33	
	W. L. & H. Board, light for January	2 32	
Mar.	J. Armstrong, coal	11 25	
	Wm. Moyes, salary	8 33	
	D. C. Baird, lumber	3 95	
	W. L. & H. Board, light for February	2 26	
	St. M. Hdwe. Co.	4 98	
	A. Bodfield, account	5 10	
Apr.	W. L. & H. Board, water for 3 months	1 79	
	Wm. Moyes, salary	8 33	
	W. L. & H. Board, light for March	2 19	
	J. Armstrong, coal	7 88	
May	Wm. Moyes, salary	8 33	
	W. L. & H. Board, light for April	2 07	
	T. W. Lucas, account	75	
	G.T.R., freight on steel hames	50	
	A. C. Wood, duty on hames	15 38	
June	Wm. Moyes, salary	8 33	
	St. M. Milling Co., account for bran	1 45	
	W. L. & H. Bd., light for May	1 97	
	D. C. Baird, account	20	
	F. H. Smith, Mfg. Co., collars and hames	41 25	
	Wm. Moyes, firemen's salaries	320 00	

July	Wm. Moyes, salary	8 33	
	St. M. Hdwe. Co., account	31	
	C. Richardson & Co. account	9 40	
	W. L. & H. Bd., light for June	1 93	
	W. L. & H. Bd., water for 3 months	1 80	
Aug.	Wm. Moyes, salary	8 33	
	C. W. Coupland, hay	8 00	
	D. C. Baird, account	9 30	
	J. M. Adam, acc.	1 87	
	Geo. Hames, straw	12 32	
	Thomas Bruce, oats	73 60	
	W. L. & H. Bd., light for July	1 91	
Sept.	Wm. Moyes, salary	8 33	
	W. L. & H. Bd., light for August	1 95	
	C. Richardson & Co., acc.	25	
	Wilson Bros., acc.	2 70	
Oct.	Wilson & Cousins, acc.	1 31	
	Weir & Weir, acc. for bran	4 20	
	J. D. Martin, acc. for coal	4 25	
	W. L. & H. Bd., water for 3 months	1 80	
	W. L. & H. Bd., light for September	2 10	
	Bell Telephone Co., rent of phone, W. Moyes	5 00	
	Jas. Armstrong, coal	3 30	
	Wm. Moyes, salary	8 33	
	St. M. Hdwe. Co., acc.	7 00	
	D. McLarty & Son, acc.	14 85	
	W. Robson	3 60	
Nov.	W. L. & H. Bd., light and lamps	3 74	
	T. W. Lucas, acc.	2 65	
	Wm. Moyes, salary	8 33	
Dec.	Wm. Moyes, salary	8 37	
	Wm. Moyes, firemen's salaries, 6 months to Dec. 31	320 00	
	Wm. Moyes, fire warden for 1915	25 00	
	W. Robson, shoeing horses	4 80	
	W. L. & H. Bd., fire hall lighting for November	2 07	
	P. Bradshaw, account	11 40	
	D. C. Baird, account	6 30	
	T. Odett, account	2 00	
	St. Mary's Hardware Co., account	15 15	
	J. Albert,	1 00	
	J. Armstrong	38 00	
	S. J. Conley	4 90	
	J. M. Adams	1 98	
			$1,178 93

Market:—

Jan.	W. L. & H. Bd., light for December	$13 86	
	Bell Telephone Co., services	15 00	
	Dunseith & Thompson, coal	51 15	
	G. T. R. Co., rent of scales	50	
	Mrs. Render, cleaning offices	1 25	
Feb.	W. M. Cubban, wheelbarrow	1 25	
	Dunseith & Thompson, coal	45 75	
	F. Flanagan, repairing flag	6 00	
	Mrs. Render, cleaning offices	1 25	
	R. Clark, oats	53 25	
	W. L. & H. Bd., light for January	11 30	
March	Mrs. Render, cleaning offices	1 25	
	W. L. & H. Bd., light for February	11 62	
	W. R. Butcher, account	1 00	
	Mrs. Render, cleaning offices	1 25	
April	A. Bodfield, account	1 00	
	C. Coupland, Jr., account	2 45	
	Bell Telephone Co., services	15 00	
	Chas. Hammond, repairs	3 50	
	W. L. & H. Bd., light for March	9 40	
	Dunseith & Thompson, coal	33 90	
	Mrs. Render	1 25	

May	Thos. Northgrave	7 50
	C. Richardson & Co.	1 65
	Seaton Bros., painting water wagon	4 00
	Thos. Northgrave	7 13
	Mrs. Render	1 25
	Thos. Northgrave	9 00
	W. L. & H. Bd., light for April	10 53
	J. Vanstone, hay	18 83
	T. Northgrave	8 85
	T. Northgrave	8 03
June	Mrs. Render	1 50
	T. Northgrave	7 95
	W. L. & H. Bd., light for May	7 26
	T. Northgrave	9 00
	T. Northgrave	8 25
	S. A. Webb, inspecting scales	1 20
	Mrs. Render	1 75
	T. Northgrave	9 00
	T. Northgrave	8 85
July	J. Vanstone, hay	11 90
	Bell Telephone Co., services	15 00
	W. L. & H. Bd., light for June	7 66
	T. Northgrave	8 55
	H. Arrell	3 75
	Mrs. Render	1 25
	T. Northgrave	7 50
	T. Northgrave	9 00
	T. Northgrave	7 65
Aug.	A. Porter, inspecting scales	6 20
	Mrs. Render	1 00
	Thos. Northgrave	8 10
	T. Northgrave	8 70
	Wm. Near, pointing town hall	7 60
	Thos. Northgrave	9 00
	M. Stevens, account for hay	16 08
	Wm. Near, pointing town hall	6 20
	Mrs. Render	1 25
	Thos. Northgrave	9 00
	W. L. & H. Bd., light for July	6 37
Sept.	Dickson's, Ltd., account for box	50
	A. Willard, account	2 93
	J. Berry	3 80
	T. Northgrave	9 00
	T. Northgrave	9 00
	M. Stevens, account for hay	10 50
	Mrs. Render	1 25
	T. Northgrave	7 50
	W. L. & H. Bd., light for August	7 09
	J. M. Adam, account	2 65
	T. Northgrave	9 00
Oct.	T. Northgrave	8 40
	Bell Telephone Co., services	10 00
	W. L. & H. Bd., light for September	9 08
	M. Stevens, hay	16 66
	T. Northgrave	9 00
	Mrs. Render	1 25
	T. Northgrave	9 00
	D. Woods	10 00
	W. Smith	5 25
	M. Hamilton	5 25
	C. McCorquodale	6 00
	E. Alberts	3 50
	Thos. Northgrave	9 00
	Thos. Northgrave	9 00
	M. Stevens	1 51
Nov.	Thos. Northgrave	9 00
	Mrs. Jackson, cleaning offices	1 50
	Thos. Northgrave	9 00

	W. L. & H. Bd., light	10 17	
	Thos. Northgrave	7 65	
	Thos. Northgrave	75	
Dec.	Mrs. Jackson, cleaning offices	1 25	
	Thos. Northgrave, 3 hours	45	
	Dickson's, Ltd., account for flags	1 00	
	W. L. & H. Bd., lamps	1 00	
	Oddy Bros., account for meals	2 80	
	Bell Telephone Co., messages	1 00	
	C. W. Coupland, account	1 75	
	M. Stevens, account for hay	90	
	W. A. McIntyre, account	3 90	
	W. L. & H. Bd., town hall lighting for November	12 93	
	Dunseith & Thompson	64 45	
	St. Mary's Hardware Co., account	2 50	
	Thos. Northgraves	2 70	
	F. Young	3 25	
	G. Hunt	2 00	
	C. Richardson & Co.	42	
	T. Northgraves	1 50	
	Mrs. Jackson	1 25	
	T. Northgraves	2 63	
			$887 34
	J. Alberts		636 00
	Police Constables:—		
	F. Young	$700 00	
	G. Hunt	600 00	
	Special constables	69 35	
			1,369 35

Assessment Committee.

Jos. Farr, collector, 1914	$158 00	
Wm. Moyes, assessor, 1915 and for 1916	400 00	
Municipal World, Assessment Roll	13 33	
Dog tags	7 71	
Judge Barron, expenses *re* Court of Revision	10 50	
Taxes remitted	12 80	
Municipal World, 4 Poll Books	5 00	
Can. Exp., express on Poll Books	30	
		607 64

Relief.

Jos. McQuillan	$150 43
Mrs. Alderson	76 88
Mrs. Kent	7 80
Mrs. Nixon	3 90
Mrs. Neaves	3 90
C. Richardson	2 00
Jas. Russell	7 80
Mrs. Nutt	70 00
Mrs. Ripley	8 00
Mrs. Dunlop	93 26
J. Handrahan	122 55
J. Bailey	60 00
Mr. Falconer	111 75
Mrs. Jackson	19 45
S. Hillis	2 00
W. Sherwood	15 52
W. Malcolm	19 02
E. Gooding	4 00
W. Woods	7 75
W. Rutherford	50
Mrs. Carr	5 88

	K. P. Shea	17 00	
	Mrs. Eaton	6 45	
	Mrs. Kent	13 11	
	W. Sherwood	4 26	
	Mrs. Booty	31 50	
	A. Brereton	3 88	
	H. Downey	65 43	
	P. Graeme, keep at Home for Incurables	297 00	
	D. Pettigrew, acc. at Victoria Hospital	163 00	
	Tickets	1 45	
	Miss Hollis, keep at House of Refuge	96 00	
	Mrs. Woolway, keep at House of Refuge	96 00	
	E. Logear, keep at House of Refuge	38 40	
	Children's Aid Society	41 56	
			1,667 43

Board of Health.

	W. A. McIntyre	$9 10	
	A. Willard	2 42	
	N. L. Brandon	5 00	
	M. Oliver	1 60	
	" "	1 80	
	Provincial Trea.	74 96	
	Postage	2 53	
	Dr. A. E. Fraleigh, exp. Prov. Meeting	35 00	
	Express	60	
	C. Milner	4 00	
	" "	1 00	
	W. Moyes, inspecting closets	25 00	
	G. McPherson, law costs	5 00	
	J. A. Walsh, inspector	40 00	
	Dr. Fraleigh, M.H.O.	200 00	
	J. Robinson	15 00	
	T. M. Clark, Sec.	10 00	
			433 01

Street Oiling.

May	Imperial Oil Co.	$456 22	
	G.T.R., demurrage	5 00	
	F. E. Butcher	69 00	
	Brit. Am. Oil Co.	534 60	
	G.T.R., demurrage	5 00	
	Brit. Am. Oil Co.	275 00	
	G.T.R., demurrage	3 00	
			1,347 82

Debenture Principal.

1915.			
Jan.	B.L. 55	$1,767 68	
July	B.L. 174	158 67	
Aug.	Church & Watt	500 00	
Sept.	B.L. 10	872 30	
Dec.	B.L. 34	745 64	
	" 50	477 96	
	" 10	322 60	
	" 2	129 25	
	" 10	1,335 82	
	" 10	1,075 30	
	" 21	124 28	
	" 86	794 48	
	" 85	670 81	
			8,974 79

Debenture Coupons and Interest.

1915.				
Jan.	By-Law	139	$240 00	
	"	259	150 00	
	"	254	293 52	
	"	55	1,175 60	
Feb.	"	191	527 48	
May	"	210	675 00	
	"	201	225 00	
	"	239	850 00	
June	"	271	250 00	
July	"	174	162 21	
Aug.	"	Church & Watt	200 00	
Sept.	"	10	231 40	
Dec.	"	34	358 06	
	"	50	257 87	
	"	10	118 90	
	"	2	54 73	
	"	10	977 38	
	"	10	396 37	
	"	6	356 86	
	"	21	59 67	
	"	86	386 19	
	"	85	87 44	
	"	217	908 15	
				8,941 83

Sinking Fund.

1915.				
Jan.	B.L.	139	$106 98	
	"	259	53 49	
	"	191 and 194	417 06	
May	"	201	167 91	
	"	210	503 73	
	"	239	570 89	
June	"	271	89 15	
Oct.	"	254	104 67	
Dec.	"	217	609 94	
				2,623 82

Public School Board re New School.

Aug.	21	J. Dickenson, interest on loan	$108 00	
	23	M. A. Rumsey " " "	60 00	
		B. Irvine " " "	54 00	
	24	S. C. Bartlett " " "	240 00	
	25	Mrs. Sparks " " "	210 00	
		S. E. Hannibal " " "	290 00	
		J. A. McVarmell " " "	120 00	
Sept.	17	I.O.O.F., No. 36 " " "	60 00	
	25	J. W. Tumball " " "	120 00	
	28	D. Duggan " " "	360 00	
Oct.	4	G. W. Dawson " " "	420 00	
		D. Duggan " " "	210 00	
	18	Mrs. Duggan " " "	192 00	
		D. Duggan " " "	168 00	
		S. E. Hannibal " " "	70 00	
		H. Irvine " " "	18 00	
		A. Carman " " "	180 00	
		Payments for new buildings	2,382 00	
		" " " "	175 00	
		" " " "	1,600 00	
		" " " "	3,756 00	
				10,793 00

Public School Board.

March	Account 1915	$2,000 00	
June	" "	3,100 00	
July	" "	1,000 00	
Aug.	" "	2,200 00	
Oct.	" "	1,500 00	
Dec.	" "	768 55	
"	Advance account 1916	1,000 00	
			11,568 55

Collegiate Institute Board.

April	Account 1915	$1,300 00	
May	" "	1,250 00	
June	" "	2,000 00	
Dec.	" "	2,115 00	
"	Advance account 1916	750 00	
			7,415 00

R. C. Separate School.

Dec.	Amount on 1915 roll		920 40

Water, Light and Heat Board.

Aug.	Debentures sold	$12,550 00	
	Street lighting	3,850 00	
	" water	150 00	
	Hydrants	2,806 66	
			19,356 66

Miscellaneous.

Bell Telephone Co., messages	$25 77
Postage, war stamps	32 36
F. Young, witness fees	14 00
Registry Office	10 50
T. M. Clark, Reg. B. M. & D.	32 20
" voters' list	56 12
W. Kaffler, auditor	35 00
B. F. Lancaster, auditor	35 00
Newsome & Gilbert, stationery	12 00
Hydro El. Ry. Assn., membership	10 00
" " Com., inspector's supplies	11 13
Telegrams	1 56
Thames Quarry Co., fence	495 05
Ont. Ry. & Mun. Board	20 00
R. Sheppard, Weir, $14.60; Div. Ct., $28.00	42 60
W. Box Estate, Division Court	20 00
Municipal World, supplies	4 51
Inquests	52 50
P. T. Coupland, travelling expenses	33 00
Ry. tickets, deputations and delegates	36 40
E. Butcher, pins for soldiers	4 50
Dr. W. Brown, examining A. Consigne	5 00
A. Carman, premium bond of treasurer	20 00
W. Dale, expense London	2 90
H. C. White, expense London	2 90
F. S. Spence, membership Ont. Mun. Assn.	10 00
H. R. McEvoy, services	24 01
M. J. Dewey, printing debentures	34 50
Mrs. A. Bums, wreath	5 00
W. Bartlett, expenses Toronto	7 00
W. Moyes, Ct. of Revision	4 00
The Planet, tax arrears book	2 50
D. Brown, rebate teamster's license	5 00
Dr. A. E. Fraleigh, post mortem	15 00
Dickens Limited, flag	12 35
R. Furness, lights Wellington St. bridge, 1914 and 1915.	15 00
	1,149 36

1915.		
Dec. 31	Cash in bank	603 81
		$192,241 20

ARREARS OF TAXES.

As at December 31, 1915.

		Property.	Years.	Amount.
112	53	L. 748, Queen St. N.	1914	$24 71
114	53	Pt. Block V, Huron St. W.	1902 and 1903	12 55
121	54	Pt. L. 3, Queen St. N.	1914	85 68
121	54	L. 1, King St. W.	1914	66 43
134	54	Pt. L. 19, Church W.	1914	10 03
137	55	L. 7 in C., William E.	1914	13 44
144	55	L. 1, Water W and Queen	1907	314 13
144	55	L. 3 and 4, St. George	1914	10 03
158	56	L. 7, Thomas E.	1914	10 03
170	56	L. 3 and 4, St. John W.	1901-1914	73 42
173	57	L. 32, Widder St. N.	1908-1914	19 36
178	57	L. 12 and 13 in J. Salme E. L. 8, 9, 10, William W..	1913-1914	35 09
199	57	L. 29, Church W.	1910-1914	5 68
261	58	L. 17, James E.	1914	2 47
201	58	L. 70, Queen N.	1914	18 64
202	58	L. 14, 15, 16, Salme E. L. 5, 6, 7, William E.	1911-1914	63 36
205	59	L. 7 and 8, Markham E.	1914	5 31
179	59	L. 14, Warren E.	1914	4 02
212	60	E. Pt. L. 5, Wellington St. W.	1912 and 1914	26 50
212	60	E. Pt. L. 1, Wellington E.	1912 and 1914	76 02
212	60	Pt. L. 3, Queen S.	1914	169 23
213	61	E. 1-3 L. 5, Water St. E.	1912 and 1914	34 84
213	61	E. Pt. 5, Wellington St. W.	1912 and 1914	27 94
213	61	W. Pt. 5, Wellington St. W.	1912 and 1914	26 77
213	62	W. Pt. 5, Wellington St. W.	1912 and 1914	27 82
223	59	L. 2, Robinson W.	1913 and 1914	30 47
				$1,193 97

Estimated value, $1,100 00

PRINCIPAL OF DEBENTURES OUTSTANDING LIABILITY.

As at December 31, 1915.

Last Maturity	By-Law		Unpaid Principal	Ann'l Payment Int. and Prin.	Annual Interest	Annual S'k'g Fd
Dec. 16, 1928	10	Waterworks	$23,098 86	2,313 20	.....	.....
Sept. 1, 1920	10	Electric Light	4,913 72	1,103 70	.....	.....
Dec. 15, 1922	9	Bridge, Etc.	8,832 67	1,471 67	.....	.....
Dec. 15, 1922	10	Water and Electric Light	2,649 78	441 50	.....	.....
Dec. 15, 1923	2	School Site	1,238 61	183 95	.....	.....
Jan. 1, 1927	55	St. M. & W. O. Ry.	27,622 88	2,943 28	.....	.....
Dec. 15, 1924	21	Electric Light	1,367 86	183 95	.....	.....
Dec. 15, 1925	34	Elec. Light and W. Works	8,206 66	1,103 70	.....	.....
Dec. 15, 1925	50	Permanent Walks & Roads	5,968 16	735 83	.....	.....
Dec. 15, 1929	86	Hydro Extension	15,717 81	1,537 51	.....	.....
Dec. 15, 1917	85	Wood Specialty Co.	1,443 92	758 25	.....	.....
July 8, 1930	174	Local Improvement	3,446 21	320 88	.....	.....
Jan. 1, 1939 / Aug. 1, 1939	139	Collegiate Institute	6,000 00	.....	240 00	106 98
Jan. 16, 1931	191	Local Improvement	11,721 89	.....	527 48	417 06
May 1, 1932	201	Wellington Bridge	5,000 00	.....	225 00	167 91
May 1, 1932	210	Hydro Extension	15,000 00	.....	675 00	503 73
Dec. 18, 1931	217	Local Improvements	18,163 00	.....	908 15	609 94
May 1, 1933	239	Overdraft	17,000 00	.....	850 00	570 89
Oct. 31, 1943	254	Wat'rw'ks and Elec. Light	5,870 30	.....	293 52	104 67
Jan. 1, 1944	259	Collegiate Institute	3,000 00	.....	150 00	53 49

June	24, 1944	271	Public School	5,000 00	.....	250 00	89 18
Feb.	24, 1945	275	Public School	15,000 00	.....	825 00	267 45
Feb.	24, 1945	272	Collegiate Institute	3,000 00	.....	165 00	53 49
Feb.	24, 1945	293	Public School	37,000 00	.....	2,035 00	659 68
July	5, 1945	303	Elec. Light and Wat'w'ks.	12,550 00	.....	690 25	223 77
Oct.	2, 1925	308	Curbs and Gutters	1,000 00	.....	55 00	83 29
				$259,812 33	$13,097 42	$7,889 40	$3,911 53

Debentures of Church & Watt, Limited, guaranted by Town of St. Marys, Principal unpaid Dec. 31st, 1915, $4,500.00, in debentures of $500 each, maturing yearly to and including Aug. 1st, 1924, with 4 per cent. interest.

RECAPITULATION.

Debenture Principal	$259,812 33
Debenture, Church & Watt, Principal	4,500 00
	$264,312 33

Principal Paid on Debentures, 1915.

B.L		Principal paid.	Sinking Fund paid to Provincial Government.
10	Waterworks	$1,335 82	
10	Electric light	872 30	
9	Bridge, steam roller, walks and roadway	1,075 30	
10	Extension of water and electric light	322 60	
2	School site	129 25	
55	St. M. & W. O. Ry.	1,767 68	
21	Water works and electric light	124 28	
34	Water works and electric light	745 64	
50	Sidewalks and roads	477 96	
86	Hydro extensions	794 48	
85	St. Mary's Wood Specialty Co.	670 81	
174	Local improvement	158 67	
139	Collegiate Institute		$106 98
191	Local improvement		417 06
201	Bridge		167 91
210	Electric extension		503 73
217	Local improvement		609 94
239	Overdraft		570 89
254	Water works and electric light		104 67
259	Collegiate Institute		53 49
271	Public School		89 18
		$8,474 79	$2,623 85
		2,623 85	
		$11,098 64	

WATER, LIGHT AND HEAT COMMISSION.

Electric Light, 1915.

Profit and Loss.

To	Power purchased	$8,165 01
"	Sub-station operation	725 23
"	Sub-station maintenance	4 75
"	Distribution operation and maintenance	582 11
"	Line transformer maintenance	136 96
"	Meter maintenance	102 77
"	Street light operation and maintenance	502 85

To Billing and collecting	296 57	
" General office salaries and expenses	1,143 40	
" Undistributed expenses	72 80	
" Interest and fixed charges	4,775 42	
" Depreciation charges	3,600 00	
" Net profit	1,596 50	
By Domestic light		$5,073 97
" Commercial light		4,222 53
" Power		8,379 87
" Street light		3,850 00
" Miscellaneous		178 00
	$21,704 37	$21,704 37

Comparative Statements.

	1913.	1914.	1915.
Domestic light	$3,815 77	$4,614 95	$5,073 97
Commercial light	4,553 73	4,733 33	4,222 53
Power	8,221 72	10,610 05	8,379 87
Street light	3,582 00	3,441 00	3,850 00
Miscellaneous	.....	.....	178 00
	$20,173 22	$23,399 33	$21,704 37
Power purchased	$10,055 82	$8,966 67	$8,165 01
Net profit	1,373 82	2,697 26	1,596 50
Fixed assets	64,415 89	68,381 15	78,870 49

WATER, LIGHT AND HEAT COMMISSION.

Electric Light.

Assets and Liabilities.

As at December 31, 1915.

Assets.

Fixed Assets:		
Land and buildings	$13,674 27	
Sub-station equipment	13,002 74	
Distributing system	22,025 40	
Line transformers	10,695 83	
Meters	12,709 33	
Street light equipment	5,049 39	
Miscellaneous construction expense	1,713 53	
		$78,870 49
Other Assets:		
Bank and cash on hand	$3,430 53	
Inventories	1,207 66	
Accounts receivable	1,685 00	
Sinking fund	1,594 91	
		7,918 10
		$86,788 59

Liabilities.

Debenture and other Liabilities:		
Debenture principal unpaid	$42,635 27	
Town of St. Mary's, Committee of Council	790 59	
Town of St. Mary's, part of debentures paid by the town in excess of what the town paid for lighting streets	4,314 15	
Hydro-Electric Power Commission Dec. Bill	875 89	
		48,615 90

Reserves, etc.:		
Principal of Construction debentures paid	$20,611 75	
Sinking Fund reserve	1,594 91	
Depreciation reserve	6,940 00	
Surplus	9,026 03	
		38,172 69
		$86,788 59

WATER, LIGHT AND HEAT COMMISSION.

Waterworks, 1915.

Profit and Loss

To Salaries	$710 39	
" General expense	453 65	
" Operating labor	686 37	
" Fuel	1,029 23	
" Electric energy	1,554 84	
" Operating supplies	101 40	
" Pump plant repair	134 70	
" Mains repair	595 74	
" Debenture payments	3,485 26	
By Hydrant rental		$2,806 66
" Sprinkling		150 00
" Consumers		4,429 71
Loss		1,365 22
	$8,751 59	$8,751 59

Assets and Liabilities.

Assets.

Fixed Assets:		
Pumping plant	$17,704 59	
Mains and hydrants	41,827 45	
Commercial service	3,997 97	
Meters	541 34	
James St. extension	1,526 39	
Special extension	1,771 69	
		$67,369 43
Other Assets:		
Cash	$1,280 27	
Sinking Fund	125 62	
Deficit	1,127 43	
		2,533 32
		$69,902 75

Liabilities.

Sinking Fund reserve	$125 62	
Debentures outstanding	46,749 64	
Town of St. Mary's	1,108 35	
Debentures paid (plant reserve)	21,919 14	
		$69,902 75

WATER, LIGHT AND HEAT COMMISSION.

Waterworks Expenditures on Capital Account, Etc.

Expenditures on plant to Dec. 31, 1915	$67,369 43
Expenditures on plant as on Jan. 1, 1910	53,026 25
Increase in investment in 6 years	$14,343 18

Operating losses, etc.:			
1910 Overdraft	$1,000 00		
1912 Loss and debenture principal	3,893 70		
1913 Loss	3,112 52		
1914 Loss	2,361 00		
1915 Loss	1,365 22		
	$11,732 44		
Less profits shown on 1910 and 1911	2,335 15		
		9,397 29	
Received from Town of St. Mary's:			
Debenture Issue 1910 expended by Council Committee			$3,781 39
" Issue 1914 60%			3,581 00
" Maturing in 1912 assumed by town			4,000 00
" Issue 1915			12,550 00
Balance		171 92	
		$23,912 39	$23,912 39
Balance as shown above appears in the books of the Commission as follows:			
Cash on hand Dec. 32, 1915			$1,280 27
Due Town of St. Mary's on debentures matured			1,108 35
			$171 92

ST. MARY'S PUBLIC SCHOOL BOARD; MISS M. E. LONG, Treasurer.

RECEIPTS AND DISBURSEMENTS

For Year Ending December 31, 1915.

1915.			
	Receipts.		
Jan. 1	By Cash on hand		$1,260 45
" "	" from Town of St. Mary's, 1915		10,568 55
" "	" from Town of St. Mary's, Advance Account, 1916		1,000 00
" "	" Township of Blanchard		163 90
" "	" Township of Blanchard, Southall Family		3 85
" "	" Grants		406 94
" "	" S.S. No. 9 Downie desks		3 00
" "	" A. H. Lofft & Co., La Lo Spray		3 00
Dec. 31	" Overdraft in Royal Bank		4 91
			$13,414 60
	Disbursements.		
	Teachers' salaries	$6,313 20	
	" supplies	154 00	
	" musical	250 00	
	Caretakers	481 08	
	Secretary	100 00	
	Inspector, for 1914 and 1915	266 00	
	Treasurer	20 00	
	Auditors	5 00	
	Rent of buildings	145 00	
	Printing and stationery	70 20	
	Supplies	155 92	
	Insurance	242 50	
	Repairs	102 35	
	Fuel	954 41	
	Water, Light and Heat Board	88 58	
	Interest on overdraft	16 70	
	Miscellaneous	59 44	
			9,424 38
	New Building, Etc.		
	A. Carman, Secretary, extra work new school	$25 00	
	" workmen's risk	15 00	
	G. M. Hendry Co., Ltd., desks	1,138 22	

White, May Co., Ltd., window shades	52 80	
C. McDonald, adjustors	34 00	
W. J. Leslie, extras on new school	21 80	
Improvement to grounds	165 09	
J. Patterson, sidewalks and work on grounds	281 00	
Transferred to Building Account	2,247 50	
Transferred to Building Account	9 81	
		3,990 22
		$13,414 60

ST. MARY'S SCHOOL BOARD.

Expenditures on New School Building, Grounds and Equipment.

W. J. Leslie, contractor	$47,857 11
St. Mary's Hardware Co., Ltd.	5,627 00
Purdon Hardware Co., Ltd.	359 00
Watt and Blackwell, architects' fees	2,679 38
W. J. Leslie, blackboards	448 17
Interest on Building Account overdraft	2 25
A. Carman, workmen's risk on new school	15 00
White, May Co., Ltd., window shades	52 80
A. Carman, Secretary, extra work new school	25 00
G. M. Hendry Co., Ltd., desks	1,138 22
C. McDonald, blind adjustors	34 00
W. J. Leslie, extras	21 80
Improvements to grounds	165 09
J. Patterson, sidewalks and improvements to grounds	281 00
	$58,705 82

To this amount must be added the interest paid out on notes to furnish funds to build new school	$2,902 40	
Less accrued interest on debentures and interest allowed on bank balance	914 19	
		1,988 21
		$60,694 03

Assets of Public School Board.

New school	$60,000 00
West Ward school	5,000 00
	$65,000 00
Debenture liability	$58,238 61

TOWN OF ST. MARY'S, IN ACCOUNT WITH PUBLIC SCHOOL BOARD.

1915.			
Feb. 22	H. Irvine,	Interest on $600 00	$18 00
Aug. 21	J. Dickinson,	" " 1,800 00	108 00
" 23	M. A. Ramsey,	" " 1,000 00	60 00
	B. Irvine,	" " 900 00	54 00
" 24	S. C. Bartlett,	" " 4,000 00	240 00
" 25	Mrs. Sparks,	" " 3,000 00	210 00
	S. E. Hannibal,	" " 6,000 00	360 00
" 28	J. A. McVannel	" " 2,000 00	120 00
Sep. 17	I.O.O.F., No. 36,	" " 1,000 00	60 00
" 25	J. W. Tumball,	" " 2,000 00	120 00
" 28	D. Duggan,	" " 6,000 00	360 00
Oct. 4	G. W. Dawson,	" " 7,000 00	420 00

Oct. 4	D. Duggan, Interest on 3,500 00	210 00	
" 18	Mrs. Duggan, " " 3,200 00	192 00	
	D. Duggan, " " 2,800 00	168 00	
Aug. 10,	1914, Royal Bank, Discount on $8,000 00	22 40	
Dec. 30,	1915, A. Carman, Interest on $3,000 00	180 00	
	Total interest on money borrowed on note for new school	$2,902 40	
" 15	To 1915 debenture and interest school site by-law of 1904	183 95	
June 24	To debenture interest and sinking fund by-law No. 271	339 18	
1915.			
Oct. 23	By accrued interest on debentures		$190 62
May 25	" Interest on bank balance		314 00
Nov. 30	" " " " "		162 57
Dec. 10	" " " " "		247 00
Dec. 31	" Levied on roll in debenture rate 801, being 1.61 mills more than Separate School supporters		2,822 92
	To debentures and interest for Public School site, 1904 to 1914 inclusive, at $183.95 yearly, not levied for against Public School supporters, but paid for out of general funds, 11 years at $183.95	2,023 45	
	The amount contributed towards these by Roman Catholic School supporters has been computed, and is placed to the credit of R.C. Separate School Board, $147.32.		
	Advance on account of 1916 rates	1,000 00	
	Items paid by the town properly chargeable to Board:		
1912.			
January.	*St. Mary's Journal*, Adv. school by-law	70 00	
	" " " Printing ballots by-law	4 00	
June.	" " " Adv. school by-law	70 00	
	" " " Printing school by-law ballots	4 00	
June.	Dep. Ret. Officers, etc., special voting on school by-law	28 00	
1914.			
March.	*St. Mary's Argus*, Adv. *re* public school by-law	5 00	
June 11	" " " Notice *re* additional $15,000	4 00	
" 11	" " *Journal*, Adv. public school by-law	6 40	
" 25	" " " Debentures and coupons	16 50	
July 9	" " " Adv. sale of debentures	2 50	
" 9	" " *Argus*, Adv. sale of debentures	2 00	
Mar. 4	J. W. Graham, drawing P.S. by-law	5 00	
May 28	J. W. Graham, drawing P.S. by-law $15,000.00	5 00	
Oct. 5	*St. Mary's Journal*, printing debentures	18 25	
	J. W. Graham, appn. Ry. & M. Board $42,000.00 by-law	10 00	
	J. W. Graham, appn. Ry. & M. Board $15,000.00 by-law	10 00	
1915.			
Feb. 10	Ry. & Mun. Board validating by-laws	10 00	
" 16	Registry Office, registering by-laws	4 00	
Apl. 30	*St. Mary's Journal*, printing debentures	16 50	
	Balance due Town of St. Mary's		3,003 02
		$6,740 13	$6,740 13
Dec. 31	Balance due Town of St. Mary's from P.S. Board	$3,003 02	
1915.			
Dec. 31	Balance at credit of Public School Board from sale of debentures to be used only for repairs to West School, interest on which has been credited to Dec. 31, 1915		$2,000 00

COLLEGIATE INSTITUTE BOARD, ACCOUNT OF MISS M. E. LONG, TREASURER.

FOR YEAR ENDED DECEMBER 31ST. 1915.

Receipts.

1915.			
Jan. 1	Cash balance on hand		$227 01
	Town of St. Mary's, 1915	$6,665 00	
	Town of St. Mary's, Advance account, 1916	750 00	
	Tuition Fees	1,731 00	
	Government Grants	1,052 32	
	County of Perth	1,882 30	
	County of Huron	140 64	
	County of Oxford	197 71	
	County of Middlesex	508 50	
	Departmental Fees	162 00	
	Balance Sale of Debenture	175 00	
	Miscellaneous	20 50	
			13,284 97
			$13,511 98

Disbursements.

Teachers' Salaries	$9,350 00	
Caretaker	510 75	
Examinations	246 66	
Secretary	100 00	
Treasurer	20 00	
Auditor	5 00	
Supplies	302 65	
Insurance	85 00	
Fuel	385 76	
Water and Light	125 36	
Interest on Overdraft	24 13	
Printing and Stationery	175 52	
Tuition Fees rebated	4 00	
Libray	64 44	
Laboratory	243 49	
Repairs	659 52	
Miscellaneous	30 25	
Improvement to Grounds	24 40	
		$12,356 93
Payments on Gymnasium, out of Current Account—		
Stafford and Henderson	$736 19	
W. F. Sheppard	200 00	
Transfer to Building Account	215 00	
		1,151 19
1915.		
Dec. 31 Cash on hand		3 86
		$13,511 98

COLLEGIATE INSTITUTE BOARD.

GYMNASIUM, BUILDING AND EQUIPMENT.

1914.

Stafford and Henderson	Contractors	$3,800 00
W. Proven	Chains	200 00
W. F. Sheppard	Architect	150 00
J. A. Irwin	Electric Wiring	70 00
F. Willard, account S. & H.	Decorator	100 00
Clure & Burt	Plumbers	147 00

1915.

F. Willard, account S. & H.	Decorator	50 00
Harold A. Wilson Co.	Apparatus	275 54
A. Willard	Electric Fixtures	33 15
Stafford and Henderson	Contractors	1,174 31
Paid out of Current Account—		
Stafford and Henderson, in full		736 19
W. F. Sheppard, Architect		200 00
		$6,936 19

ROMAN CATHOLIC SEPARATE SCHOOL BOARD, 1915.

Receipts.

1915.		
Jan. 1	Balance on hand	$404 66
June 30	Borrowed, Royal Bank	400 00
Sept. 16	Government Grant	44 00
Dec. 16	Town of St. Marys	920 40
Dec. 16	Township of Blanchard	28 00
	Township of Downie	34 78
	Township of Nissouri	17 01
		$1,848 85

Disbursements.

	Salary	$600 00
	Caretaker	37 50
	Fuel	108 75
	Interest on $800 loan for furnace	23 80
	Royal Bank, note and interest	413 60
	Supplies, etc.	33 35
	Improvements to Grounds	44 96
1915.		
Dec. 31	Balance in Bank	586 89
		$1,848 85

PUBLIC LIBRARY BOARD.

For Year Ended December 31, 1915.

Receipts.

1915.			
Jan. 1	Balance on hand		$303 45
	By Town Grant	$800 00	
	" Government Grant	124 15	
	" Sale of Magazines	25 95	
	" Cards, Fines, etc.	30 23	
	" Public School Board, Coal, etc.	60 00	
			1,040 33
			$1,343 78

Disbursements.

Librarian, Salary	$375 00	
" " as Secretary Treasurer	25 00	
" " Relief	4 00	
Magazines	101 97	
Books	249 73	
Light, heat, etc.	203 20	

	Supplies	117 69	
	Freight and cartage	6 00	
	Printing	17 30	
			1,099 89
Dec. 31	Balance in bank		243 89
			$1,343 78

	Insurance Miss M. E. Long, Oct. 16, 1917., prem.		$32 00
	186473 Gore Building	$3,000 00	
	Furniture	400 00	
	Books	600 00	
		$4,000 00	

INSURANCE ON DIFFERENT PROPERTIES.

Town Hall	$14,000 00
No insurance on contents of Town Hall	.....
Fire Hall	600 00
Fire Horses	1,000 00
Water Street Houses $400 each	800 00
A. Falconer, house and contents	600 00
Board of Works Employees against accidents	.....
Firemen Employees against accidents	.....
Public Library	400 00
New Public School Building	18,500 00
" " " Contents	1,500 00
West Ward School Building	1,500 00
" " " Contents	500 00
R.C. Separate School	2,000 00
Collegiate Institute Building	17,500 00
" " Contents	2,500 00
" " Gymnasium and Contents	3,000 00
Water, Light and Heat Commission:	
Building, engines, condenser, shafting, etc.	4,000 00
Electric Light Generator, etc.	2,500 00
Boiler Insurance against accidents	.....
Employees Insurance agaist accidents	.....
No insurance is carried on meters, supplies, etc., in basement of Town Hall	.....
Wood Specialty Co., Ltd.	.....
Economical Mutual, loss payable to town	1,500 00
Mount Royal, loss payable to town	3,000 00
Bonds:	
H. M. Miller, Treas. W. L. & H. Com., Dom. of Canada Guarantee and Accident Insurance Co. Policy	1,000 00
Miss M. E. Long, Treas. Public School Board, Dom. of Canada Guarantee and Accident Insurance Co. Policy	500 00
Miss M. E. Long, Town Treas., Dom. of Canada Guarantee and Accident Insurance Co. Policy	5,000 00
Joseph Farr, collector	.....
S. Fraliegh and J. A. McLaren, bond	5,000 00

ST. MARY'S & W.O. RAILWAY DEBENTURE FUND.

Sixteen years $875 yearly to be applied on payment of debenture.

1912.			
March 1,	Received from C.P.R. for Sinking Fund		$14,000 00
	Applied on 1912 debenture maturing		875 00
			$13,125 00
1913.	Applied on 1913 debenture maturing		875 00
			$12,250 00
1914.	Applied on 1914 debenture maturing		875 00
			$11,375 00
1915.	Applied on 1915 debenture maturing		875 00
	Amount that should be in Sinking Fund but has been absorbed in general funds of the town		$10,500 00

CHURCH & WATT, LIMITED, DEBENTURE SINKING FUND.

Payment from Title & Trust endorsed on mortgage securing debentures to be used as sinking fund, the town to pay 10/27 of debentures and interest annually.

The liability by years is as follows:—

1916	10/27 of debenture and interest.....	$680 00	$251 85	Town's Share
1917	10/27 of debenture and interest.....	660 00	244 44	" "
1918	10/27 of debenture and interest.....	640 00	237 03	" "
1919	10/27 of debenture and interest.....	620 00	229 63	" "
1920	10/27 of debenture and interest.....	600 00	222 23	" "
1921	10/27 of debenture and interest.....	580 00	214 82	" "
1922	10/27 of debenture and interest.....	560 00	207 40	" "
1923	10/27 of debenture and interest.....	540 00	200 00	" "
1924	10/27 of debenture and interest.....	520 00	192 60	" "
		$5,400 00	$2,000 00	

This $2,000.00 should be in Sinking Fund, but the money was used to buy the Flats Park..... .....

Provincial Treasurer, Toronto:
Amount of Sinking Fund at Credit of Town of St. Mary's $8,151 58

THE ST. MARY'S PATRIOTIC FUND, J. POOL, TREASURER.

Receipts.

Private subscription acknowledged in papers	$2,249 92
Town of St. Mary's	1,000 00
Bank interest	101 21
	$3,351 13

Disbursements.

To Various Beneficiaries	$2,732 10
" *St. Mary's Journal*, 1,000 Envelopes	2 00
" War Stamps on cheques	7 52
" Transferred to Hon. Treasurer Patriotic Fund	609 51
	$3,351 13

TAX ROLL OF 1915.

1915.			
	Total Tax Roll	$63,168 37	
	By Cash from Collector to December 31, 1915		$58,899 92
	" 20 per cent. allowed on August Payments.....		395 36
	" Rebates for exemptions town property, etc.....		1,675 03
Dec. 31.	Balance uncollected		2,198 06
		$63,168 37	$63,168 37

The Collector has not yet completed the collection of taxes for 1915.

RECONCILIATION OF BANK BALANCES AS AT DECEMBER 31, 1915.

Royal Bank Debenture Account, held for repairs West Ward School	$2,000 00	
Royal Bank Special Account, for St. M. & W.O. Ry. Debentures...	3,530 05	
Royal Bank, Town of St. Mary's Current Account overdrawn.....		$4,562 13
Balance at Credit of Town of St. Mary's, including all the above accounts		967 92
	$5,530 05	$5,530 05
Balance in Bank	$967 92	

Outstanding Cheques.

947	J. Willard	$ 11 06	
685	L. Constable	2 00	
940	J. G. Robinson	2 10	
996	D. Brown	5 00	
1032	J. Willard	111 95	
1055	*St. Mary's Journal*	11-00	
1062	Dr. Fraleigh	200 00	
1064	J. Bannerman	4 00	
1082	J. Robinson	15 00	
1091	*Municipal World*	2 00	
			$364 11
	Balance as per Cash Book		603 81
			$967 92

TREASURER'S LEDGER BALANCE AS AT DECEMBER 31, 1915.

1	Fixed Assets	$219,714 92	
2	Passive Assets	82,008 26	
3	Sinking Fund, Prov. Treas.	8,151 58	
4	St. Mary's Wood Specialty Co., Ltd.	3,600 00	
5	St. Mary's & W.O. Ry. Sinking Fund		$ 10,500 00
6	Church & Watt, Ltd., Sinking Fund		2,000 00
7	Heirs of John Murphy		200 00
8	Debenture Collections in advance of maturity		696 61
9	Debenture Liability		264,312 33
11	Surplus, Town of St. Mary's		35,349 80
12	Public School Board, W.W. School		2,000 00
13	Public School Board, W.W. School	3,003 02	
15	R. C. Separate School Board		147 32
16	Collegiate Institute Board	750 00	
18	Cash	603 81	
20	Bills Receivable	258 24	
22	Collector of Taxes	2,198 06	
24	Arrears of Taxes	1,100 00	
26	Rents due to December 31, 1915	24 50	
32	Miscellaneous Receipts, steps for curb and gutters	10 50	
34	Loans and Bills Payable		5,550 00
42	Salaries due to December 31, 1915		170 83
90	Relief Committee		496 00
		$321,422 89	$321,422 89

To His Honour the Lieutenant-Governor in Council.

Parliament Buildings, Toronto Ont.

Townships of Head, Maria and Clara.

Period January 1st, 1912, to March 26th, 1915.

Your Honour,—The authority to me bearing date of November 8th, 1915, received through the Provincial Municipal Auditor, J. W. Sharpe, Esq., was exercised in conducting an audit of the books, accounts and vouchers, and moneys of the above Municipalities, same being brought to a conclusion on January 29th, 1916.

I did not see the petition praying for a special audit, but I understand the principal reason for the audit was that the present Treasurer, Mr. R. M. Boal, would not make any entries in the books until the transactions of his predecessors had been cleared up. Acting under instructions from the Reeve the audit was made from January 1st, 1912, to March 26th, 1915.

Oath of Office.

The Council took the Oath of Office at the beginning of each year, this proceeding being recorded in the minutes.

Minutes of Council Meetings.

A perusal of the minutes does not throw a great deal of light on the affairs of the township. Very few of the disbursements were authorized and there are apparently no by-laws. In this connection, however, it would appear that the usual procedure was after the following fashion, which is taken from the minutes of Jan. 6th, 1912:—

Wm. Jackson gives notice at this meeting of Council to introduce a By-law for the payment of moneys.

Moved by Wm. Jackson, seconded by Wm. Cotnam, that By-law for payment of money be read for the first time. Carried.

Moved by Wm. Cotnam, seconded by Wm. Jackson, that By-law for payment of money be read for second time. Carried.

Moved by Wm. Cotnam, seconded by Wm. Jackson, that By-law for payment of money be given third reading short and passed. Carried.

I could not find any further record of this By-law.

By-Laws.

There do not appear to be any By-laws. Mr. Boal, the Clerk, informed me that there were none in his possession previous to the date when he took office.

Assessment Rolls.

The Assessment Roll of 1912 was not produced.

I compared the Assessment Roll for 1913 with the Collector's Roll for the same period, and found the following discrepancies which are not accounted for in the record of the Court of Revision:—

			Assessment Roll.	Collector's Roll.
No.	9	Thos. Legge	$50 00	$200 00
"	33	F. Ranson	250 00	Not in Collector's Roll.
"	48	W. P. Dunlop	1,975 00	1,600 00
"	55	W. Jennings	500 00	300 00
"	67	P. O'Riley	3,375 00	3,000 00
		W. B. Wilson	800 00	600 00
		D. Doherty	200 00	Not in Collector's Roll.
		Canada Timber Co.	800 00	" " "
		H. K. Egan	800 00	" " "

In the 1914 Assessment Roll the only discrepancy was W. P. Dunlop reduced $300.00 by Revision, not deducted.

None of the Rolls bore the statutory declaration of the Assessor, nor were they summarized.

Collector's Accounts.

I balanced the Collector's Roll for 1912 and the statement shows, after crediting all cash, and arrears as per roll, that there is a balance owing to the township of $115.25. Mr. J. Donnelly, who was Collector for 1912, could give no definite explanation of the apparent shortage beyond saying there was some road work allowed which he had marked as paid, but there is no evidence to support his claim. He also said that he had received no salary for collecting, and I do not see any payment to him for salary as Collector either in 1912, 1913 or 1914. Mr. Donnelly was appointed Collector as per minute of Oct. 26th, 1912, and no salary was mentioned.

At my meeting with the Council on Jan. 29th, 1916, it was agreed to give Mr. Donnelly credit for salary $50.00, thus reducing the balance against him to $65.15. This may be still further reduced later by items of road work which Mr. Donnelly says he marked as paid on the roll, but did not collect. He is to prepare a list of these items and submit them to Council.

The balance of the 1913 Collector's Roll shows an apparent shortage of $99.50. Mr. P. J. Dunlop was the Collector, and when examined as to this balance stated that he admitted, roughly speaking, $40.00, and that he had made some payments to the Treasurer for which he had no receipts. As Mr. Dunlop was able to produce all his receipts for collections on the 1913 Roll, it would appear, in the absence of any proof to the contrary, that he must be held responsible for the balance of $99.50.

As a large proportion of the 1914 Roll was collected after March 26th, 1915, the balancing of this roll would not appear to come within the scope of my audit.

None of the Rolls examined had the statutory declaration of the Clerk.

Treasurer's Accounts.

It appears that Mr. J. Dunlop acted as Treasurer in 1912, and also in 1913, up to the time of his death in July of that year. Mr. J. B. Jardine, his successor, acted from July, 1913, to Dec. 31st, 1913, but Mr. Jardine says he never had the books in his possession, although he collected and paid out certain moneys to which we will refer later.

Mr. W. G. Jackson acted as Treasurer for the whole of 1914 and the early part of January, 1915, and was succeeded by his father, Mr. Wm. Jackson, who held office as Treasurer until March 26th, 1915.

Owing to the fact that there was no record in the cash book of the transactions which occurred during the holding of office by J. B. Jardine and Wm. Jackson, we

arranged a meeting at Deux Rivieres with these gentlemen, and also the Collector and other officials of the township. This meeting took place Dec. 18th, 1915, but was not productive of much information. My chief difficulty was to ascertain what moneys had been paid to the township, other than taxes, and from information subsequently obtained from the Treasury Department, the Department of Education, the License Inspector, and the County Treasurer, I believe I have arrived at, as nearly as possible, the actual condition of affairs in the township as on March 26th, 1915.

I have prepared statements of receipts and disbursements for the following periods:—

January 1st to December 31st, 1912.
January 1st to December 31st, 1913.
January 1st to December 31st, 1914.
January 1st to March 26th, 1915.

The final statement shows a balance of cash to be carried forward on March 26th, 1915, of $440.17, from which will have to be deducted $20.00, being $10.00 salary due to J. Dunlop, and a similar amount for salary due to J. B. Jardine. Treasurers in 1913. These amounts were never paid. I might here state that when the present Treasurer was appointed no money was given to him by anyone, and from information I have been able to gather, the responsibility for this balance of $420.17 appears to be divided, as shown hereafter in my report on the various Treasurers.

In 1912 I have been able to trace into the cash book, from the Treasurer's receipt book, all moneys paid to the township, except as hereafter mentioned.

No vouchers were produced for the disbursements made in 1912 and I was unable to obtain any information as to their whereabouts so was, therefore, obliged to take the entries appearing in the cash book.

The balance of cash in hand Dec. 31st, 1912, as per the cash book, was carried forward Jan. 1st, 1913, and from this date to July 7th, 1913, I was able to trace into the cash book the various amounts paid to the Treasurer, Mr. J. Dunlop, whose death occurred on or about this time. No vouchers were produced for the disbursements entered in the cash book for this period, so I was again obliged to take the cash book entries as they appear.

The position of the cash, as at July 7th, 1913, according to the cash book, is as follows:—

Balance due by J. Dunlop		$107 56
To this must be added three items of cash paid to J. Dunlop by Thos. Legge, for taxes, as per the Treasurer's own receipt book, these items not having been entered in the cash book:—		
Feb. 20th, 1912	$8 00	
March 22nd, 1913	30 00	
April 29th, 1913	40 00	
		78 00
		$185 56
Less carried forward in cash book, Jan. 1st, 1914, as cash in hand by W. G. Jackson		29 45
		156 11
Less salary for 1913, not paid		10 00
Balance apparently due by late J. Dunlop		$146 11

In explanation of the reason why W. G. Jackson, who did not take office until Jan. 1st, 1914, should have charged himself with $29.45 on account of J. Dunlop, I gathered from relatives of the latter that they thought this was all Mr. Dunlop owed. I found out, however, that they were taking credit, against the balance due by J. Dunlop, for certain disbursements made by J. B. Jardine, J. Dunlop's successor, long after Mr. Dunlop's death. In addition to this the $78.00 received from Thos. Legge, and not entered in the cash book, had not been taken into consideration, no one evidently having any knowledge of this.

J. B. Jardine acted as Treasurer from July 7th to Dec. 31st, 1913. Mr. Jardine says he never had the cash book in his possession, and he could not remember what moneys he had received, although he was able to produce receipts for disbursements amounting to $217.34. At the time of our meeting a former Collector, J. Donnelly, was present, and he claimed to have paid some money to J. B. Jardine on account of taxes. Neither one could remember the amount, which each, however, seemed to think was approximately $37.00. There being no objection raised, I gave J. Donnelly credit for this amount and charged it to J. B. Jardine.

I subsequently discovered through correspondence with the County Treasurer and others exactly what J. B. Jardine appears to have received during his term of office, and his position is apparently as follows:—

Receipts.

School grant	$217 44
School grant	48 41
License fund	78 75
J. Donnelly (taxes)	37 00
	$381 60

Disbursements.

W. P. Dunlop	$56 16
P. Reilly	79 20
T. Legge	78 75
T. Legge	82 08
Allowance for salary not paid	10 00
Balance	75 41
	$381 60

Mr. Jardine, I believe, was burned out during his term of office, and he says that a Post Office Money Order for $28.00 or $29.00 was lost in the fire. No doubt if the Council instructed the Clerk to look into this matter the amount will be recovered from the Post Office Department, and thus reduce the balance of $75.41 against Mr. Jardine.

W. G. Jackson was the next Treasurer to hold office, from Jan. 1st, 1914, to the early part of January, 1915. I was able to verify the amounts received by him for taxes, and also school grants and license fund, and vouchers were produced for the various disbursements made during his term of office.

There is a slight difference between the amount acknowledged by W. G. Jackson for school grants and the amount shown in the statement of the County Treasurer. I have, however, taken the figures as given by the latter.

There was also a payment of $75.00 from the License Inspector on January 7th, 1915, which was received by W. G. Jackson. The amount was not entered in the cash book and I have charged the $75.00 against W. G. Jackson, whose account appears to be as follows:—

Receipts in 1914 (including cash in hand January 1st, $29.45)	$1,741 55	
Disbursements in 1914	.....	$1,736 75
Receipts for taxes in 1915	677 00	
License fund, January 7th, 1915	75 00	
Disbursements in 1915	.....	586 75
Balance to be accounted for	.....	170 05
	$2,493 55	$2,493 55

From some date in January, 1915, to March 26th, 1915, W. Jackson acted as Treasurer, but did not make any entries in the cash book. I have been able to find out what he collected and disbursed, however, and have made the necessary entries in the cash book. The result shows that W. Jackson owes the township $28.60, which he admits.

The net result of my examination into the accounts of the various Treasurers of the township would seem to show that each Treasurer, for the period under examination, is in default, the amounts apparently due by each being as follows:—

J. Dunlop (deceased)	$146 11
J. B. Jardine	75 41
W. G. Jackson	170 05
W. Jackson	28 60
	$420 17

In connection with these balances I understand from the relatives of J. Dunlop that they are willing to make good the amount due to the township by him.

Mr. Jardine says he cannot understand why there is any balance against him, and this is a matter for Council to deal with.

As regards W. G. Jackson, I understand his present whereabouts are unknown.

I have a letter from the Treasurer dated Feb. 3, 1916, sating that W. Jackson has paid him $28.00.

In getting at my information I found it necessary to examine the cash books of the three school sections, and I may state here, that in S. S. No. 2 cash book I found that some sixty pages, containing the transactions prior to Jan. 1st, 1913, had been torn out.

Assets.

The various items under this heading explain themselves. Steps should be taken with a view to collecting the arrears of taxes owing to the township, especially on the 1912 Roll. If it is found that any of these arrears have already been paid, they will have to be charged against whoever collected them.

Liabilities.

The item of $605.54, due to the County Treasurer, is taken from a statement furnished by him, and is also confirmed by information received personally from the Township Treasurer.

With regard to the amounts shown as due to School Sections Nos. 2 and 4, I received information to this effect from the Council. I could not verify the amounts personally, not having audited the school books and not being in possession of any information with regard to the position of affairs between the township and the schools on Jan. 1st, 1912, from which date I began my examination. I am of the opinion, however, that the statement represents, as nearly as it is possible to ascertain from available information, the position of the township's affairs as on March 26th, 1915.

General.

It is apparent that in the past sufficient attention has not been given to the affairs of the township, especially in the keeping of papers, etc. No Collector's Rolls can be produced previous to 1912, so that it is impossible to find out if there are any arrears before that year.

It appears to have been a common practice on the part of the Collectors to pay moneys over to the schools direct, instead of to the Treasurer.

As far as I could learn, no effort has been made to collect any of the arrears, as shown on the lists, and, in fact, I heard it remarked that some of the taxes shown as outstanding had actually been paid.

One, at least, of the Councillors, as far as I can ascertain, appears to be disqualified under the Act from holding office.

Recommendations.

Assessment Rolls.—The Assessor, after completing his assessment, should total each page, make a summary at the end of the Roll, attach the statutory declaration and return his Roll to the Clerk.

Council should fix the date for holding the Court of Revision, and on the day of the Court the Clerk should have ready for the members a list of appeals, if any, and the disposal of each appeal should be shown on the list. This list should afterwards be signed by the Chairman of the Court and the Clerk, and be embodied in the minutes of the Court.

It is the duty of the Clerk to give effect to the findings of the Court by altering the Assessment Roll where necessary, and appending his initials to each alteration so made, together with the date of the meeting and the words "Court of Revision," or the initials "C. R."

Collector's Roll.—It is the duty of the Clerk to prepare the Collector's Roll, after the Assessment Roll has been finally revised and confirmed.

Each page of the Collector's Roll should be added and balanced and a summary made at the end of the Roll, to which should be attached the statutory declaration of the Clerk.

No alteration should be made in any of the figures on the Roll after it leaves the hands of the Clerk.

At the time appointed by Council for the return of the Roll, the Collector should prepare a statement of arrears, and the sum of these arrears, together with the cash paid by him to the Treasurer, should equal the total amount of the Roll.

Treasurer's Accounts.—The Treasurer should issue receipts for all moneys received by him, and copies of these receipts should be kept on file.

Disbursements should be made only on orders signed and countersigned by the Reeve and Clerk, after receiving the approval of Council, and all disbursements should be recorded in the minutes.

Vouchers for all disbursements should be carefully filed away, together with any accounts connected therewith, so as to be readily available at any time when required.

Minutes.—All proceedings of Council meetings should be recorded in the minute book, and especially those transactions dealing with the payment of moneys. No money should be paid out without the approval of Council, such approval being recorded in the minutes in the usual way.

By-laws.—A By-law book should be kept, and all By-laws, after being properly passed by Council, recorded therein.

I would recommend that the various officials of the township study the Municipal Act and endeavor to live up to its requirements.

I desire to express my appreciation of the courtesy shown me by your various officials during the course of my audit.

Yours faithfully,

CHARLES E. HAMMOND,

Accountant and Auditor.

TOWNSHIPS OF HEAD, MARIA AND CLARA.

MARCH 26TH, 1915.

Assets.

Liquid—		
Cash in hands of J. Dunlop	$146 11	
Cash in hands of J. B. Jardine	75 41	
W. G. Jackson	170 05	
W. Jackson	28 60	
		420 17
Balance in hands of J. Donnelly *re* 1912 roll	$65 15	
Balance in hands of P. J. Dunlop *re* 1913 roll	99 50	
		164 65
Arrears of taxes, 1912	$306 68	
Arrears of taxes, 1913	90 80	
Arrears of taxes, 1914	565 73	
		963 21
Arrears of railway tax—		
1913	$30 96	
1914	30 96	
		61 92
Passive—		
Schools and Equipment—		
No. 1	$800 00	
" 2	200 00	
" 4	1,000 00	
		$2,000 00
		$3,609 95

TOWNSHIPS OF HEAD, MARIA AND CLARA.

MARCH 26TH, 1915.

Liabilities.

Current—		
County Treasurer	$605 54	
School Section No. 2	214 43	
School Section No. 4	230 12	
		$1,050 09
Balance, being excess of Assets over Liabilities		2,559 86
		$3,609 95

TOWNSHIPS OF HEAD, MARIA AND CLARA.

ABSTRACT OF RECEIPTS AND DISBURSEMENTS, JANUARY 1ST TO DECEMBER 31ST, 1912.

Receipts.

Balance from 1911	$142 32
Taxes	1,382 80
License fund	158 40
Fines	2 00
School grants	282 80
Railway tax	85 98
	$2,054 30

Disbursements.

Salaries and allowances	$403 88
Printing and stationery	10 29
Loans	212 00
Roads	5 00
County rates	151 90

Schools	1,227 04
Miscellaneous	3 83
Balance forward	40 36
	$2,054 30

TOWNSHIPS OF HEAD, MARIA AND CLARA.

Details of Receipts, January 1st to December 31st, 1912.

Balance from 1911		$142 32
Taxes—		
1909	$31 50	
1910	199 75	
1911	936 55	
1912	215 00	
		1,382 80
License fund		158 40
Fines		2 00
School grants		282 80
Railway tax		85 98
		$2,054 30

Details of Disbursements, January 1st to December 31st, 1912.

Salaries and Allowances—		
Thos. Legge, collector	$50 00	
Johnstone & Gardner	10 00	
Wm. Jackson	4 00	
T. McAnulty	4 00	
H. Beauchamp, selecting jurors	8 00	
W. G. Jackson, posts, etc.	20 00	
W. G. Jackson, clerk	75 00	
J. H. Dunlop, selecting jurors	4 00	
J. B. Jardine	45 00	
Thos. Legge, assessor	40 00	
H. A. Rielly, audit	6 00	
J. B. Lalonde, audit	6 00	
W. G. Jackson	9 38	
Thos. Legge	3 50	
J. Dunlop, treasurer	20 00	
H. Beauchamp, reeve	19 00	
J. A. Smith, councillor	19 00	
Wm. Jackson	19 00	
W. G. Jackson, selecting jurors	4 00	
W. P. Dunlop, councillor	19 00	
W. Cottenham, councillor	19 00	
		$403 88
Printing and Stationery—		
Pembroke *Standard*		10 29
Loans—		
Royal Bank		212 00
Roads—		
J. Gardiner, snow ploughing		5 00
County Rates—		
County Treasurer		151 90
Schools—		
S.S. No. 1	$378 75	
S.S. No. 2	378 06	
S.S. No. 4	470 23	
		1,227 04
Miscellaneous—		
Commission on money orders, etc.		3 83
Balance forward		40 36
		$2,054 30

TOWNSHIPS OF HEAD, MARIA AND CLARA.

Abstract of Receipts and Disbursements, Jan. 1st to Dec. 31st, 1913.

Receipts.

Balance forward	$40 36
Taxes	779 40
License Fund	161 55
School Grants, per County Treasurer	265 85
	$1,247 16

Disbursements.

Salaries and allowances	$22 00
Roads	15 00
Charity	5 00
County rates	82 80
Schools	846 39
Printing and stationery	5 00
Balance forward	270 97
	$1,247 16

TOWNSHIPS OF HEAD, MARIA AND CLARA.

Details of Receipts and Disbursements, Jan. 1st to Dec. 31st, 1913.

Receipts.

Balance forward		$40 36
Taxes—		
1909	$36 20	
1910	22 40	
1911	100 00	
1912	620 80	
		779 40
License Fund		161 55
School Grants, per County Treasurer		265 85
		$1,247 16

Disbursements.

Salaries and Allowances—		
W. G. Jackson, election account	$11 00	
J. Donnelly, election account	11 00	
		22 00
Roads—		
W. Cottenham, road work		15 00
Charity—		
Hospital for Sick Children		5 00
County Rates—		
County Treasurer		82 80
Schools—		
S. S. No. 1	$273 96	
S. S. No. 2	229 20	
S. S. No. 4	343 23	
		846 39
Printing and Stationery—		
Municipal World		5 00
Balance forward		270 97
		$1,247 16

TOWNSHIPS OF HEAD, MARIA AND CLARA.

ABSTRACT OF RECEIPTS AND DISBURSEMENTS, JAN. 1ST TO DEC. 31ST, 1913.

Receipts.

Balance forward	$270 97
Taxes, 1913	1,365 97
School Grants	268 78
License Fund	77 35
	$1,983 07

Disbursements.

Salaries and allowances	$268 00
Printing and stationery	61 97
Roads	33 00
Charity	5 00
Election expense	17 00
Schools	1,336 78
Law costs	1 00
Miscellaneous	14 00
Balance forward	246 32
	$1,983 07

TOWNSHIPS OF HEAD, MARIA AND CLARA.

DETAILS OF RECEIPTS AND DISBURSEMENTS JANUARY 1ST TO DECEMBER 31ST, 1914.

Receipts.

Balance forward	$270 97
Taxes, 1913	1,365 97
School Grants	268 78
License Fund	77 35
	$1,938 07

Disbursements.

Salaries and Allowances—		
W. J. Jardine, councillor, 1913	$19 00	
W. P. Dunlop " "	19 00	
R. M. Boal " "	19 00	
J. Smith " "	19 00	
H. Beauchamp, reeve, 1913	19 00	
H. Beauchamp, selecting jurors. 1913	4 00	
J. R. Beauchamp, selecting jurors, 1913	4 00	
R. M. Boal, assessor	40 00	
J. R. Beauchamp, clerk, 1913	60 00	
P. J. Dunlop, collector	65 00	
		$268 00
Printing and Stationery—		
O'Gorman Co., 1913	6 66	
Pembroke *Standard*	34 77	
L. J. Morris, map	4 00	
V. Vincent	2 00	
Municipal World	14 54	
		61 97
Roads—		
J. Jennings, road work, 1913	$17 50	
D. Donnelly " "	5 00	
J. Furlong " "	6 00	
J. Smith " "	2 50	
J. E. Jennings " "	2 00	
		33 00

Charity—		
Sick Children's Hospital		5 00
Election Expense—		
W. G. Jackson	$13 00	
W. P. Dunlop	4 00	
		17 00
Schools—		
S.S. No. 1	$523 46	
S.S. No. 2	333 68	
S.S. No. 4	479 64	
		1,336 78
Law Costs—		
P. J. Dunlop		1 00
Miscellaneous—		
W. P. Dunlop, rebate on taxes	$9 00	
M. McGinnley, rebate on taxes	1 00	
Postage and Registration	4 00	
		14 00
Balance forward		246 32
		1,983 07

ABSTRACT OF RECEIPTS AND DISBURSEMENTS, JANUARY 1ST TO MARCH 26TH, 1915.

Receipts.

Balance forward	$246 32	
Taxes, 1914	877 00	
License Fund	75 00	

Disbursements.

Salaries and Allowances		$176 00
Printing and Stationery		2 60
Schools		567 55
Election		12 00
Balance forward		440 17
	$1,198 32	$1,198 32

DETAILS OF RECEIPTS AND DISBURSEMENTS, JANUARY 1ST TO MARCH 26TH, 1915.

Receipts.

Balance forward	$246 32
Taxes, 1914	877 00
License Fund	75 00
	$1,198 32

Disbursements.

Salaries and Allowances—	
J. E. Jennings, councillor, 1914	$19 00
W. P. Dunlop " "	19 00
W. Cotnam " "	19 00
H. Beauchamp, reeve "	19 00
H. Beauchamp, selecting jurors, 1914	4 00
J. J. Fink, auditor, 1914	6 00
V. Vincent, auditor, 1914	6 00

W. G. Jackson, clerk, 1914	50 00	
" treasurer, 1914	20 00	
" selecting jurors, 1914	4 00	
" postages, 1914	10 00	
		$176 00

Printing and Stationery—

V. Vincent, 1914	$2 00	
O'Gorman Co., 1914	60	
		2 60

Schools—

S.S. No. 1	$350 00	
S.S. No. 2	87 57	
S.S. No. 4	129 98	
		567 55

Election—

R. M. Boal		12 00
Balance		440 17
		$1,198 32
Balance forward	$440 17	
Less salary due in 1913 to J. Dunlop $10.00 and J. B. Jardine $10.00	20 00	
	$420 17	

TOWNSHIPS OF HEAD, MARIA AND CLARA.

Balance of 1912 Collector's Roll.

Face of roll as prepared by Clerk	$1,243 61	
Add error in addition folio 5	8 70	
Less error in extension No. 12 Hunter & Co.		1 00
Add error in extension No. 25, W. Cotnam	11 32	
Less " " " " 27, W. G. Jackson		2 50
" " " " " 34, F. Ranson		2 50
" " " " " 46, P. Reilly		2 25
Balance, being net amount of roll as corrected		1,255 58
	$1,263 63	$1,263 63

Balance forward	$1,255 38	
Dec. 24, 1912, Cash to Treas. from J. Donnelly		215 00
Jan. 20, 1913 " "		108 85
Mar. 22, " " "		35 00
Mar. 27, " " "		42 00
May 20, " " "		100 05
June 16, " M. J. Donnelly		100 00
June 26, " "		49 50
July 7, " " "		11 40
July 7, " " "		137 00
No date " "		37 00
Taxes on roll marked not paid as per list		306 68
Salary as Collector		50 00
Overpaid on No. 46, P. Reilly	2 25	
Balance		65 15
	$1,257 63	$1,257 63

TOWNSHIPS OF HEAD, MARIA AND CLARA.

Taxes on 1912 Collector's Roll Marked "Not Paid."

Section 1.

No.	Name.	Con.	Lot	
74	Dunlop, J. H.	13 B.	13.	$10 00
75	" W. P.	B.	12, 13	22 00
76	" Jas.	A. B.	20, etc.	58 00
84	Jennings, J. E.	8.	17, 18	4 00
87	Murray J.	11, 12	22, etc.	8 00
88	Chapman, C.	7.	34, 35	7 00
89	Colter. Miss L.	A. B.	1, 2	8 00
91	McNulty, Thos.	6	31, 32	7 80
92	Jennings, W.	9	16, 17	2 00
95	Lamure, Jos.	7	18	4 00
96	Doherty, D.	7	32, 33	11 00
99	Malboef, Jos.	6	34, 35	8 80

Section 2.

39	Welsh, M.	B.	34	5 10
42	Stewart, Jas.	A.B.	27, 28	1 80
51	Heney, J.	A.	23, etc.	60
52	Dunlop, Jas.	B.	36	1 70
57	A. Keys Estate	A. B.	60, 61	4 40
56	Poirrier, C.	A.	65, 66	10 00
63	Williams, W. H.	B.	40	4 40
66	White, P.	A. B.	67, 68	12 00

Section 4.

9	Legge, Thos.	A.	Pt. 20	4 20
12	Hunter, & Co.	A.	20	28 26
13	Keallt, M.	A.	20	3 10
19	Canada Timber Co.	A.	20	16 80
23	Taris, W.	A. B.	7, 8, etc.	6 30
25	Cotnam, W. Jr. (Mrs. Bangs)	A.	Pt. 20	11 32
26	Ranson, F.	A. B.	Pt. 19	4 20
27	Jackson, W. G.	A.	Pt. 20	.25
28	Cotnam, J.	B.	22	2 10
29	Booth & Ostrum	A.	15 acres	26 00
31	Scott, W.	B.	Pt. 20	4 10
33	McComill, A.	A.	20	2 10
34	Ranson, F.	A.	Pt. 20	5 25
36	Legge, S. P.	A.	"	2 10
				$306 68

TOWNSHIPS OF HEAD, MARIA AND CLARA.

Balance of 1913 Collector's Roll.

Face of roll as prepared by Clerk	$1551 27	
Add error in extension No. 51, J. Jennings	2 00	
" " 58, A. Pichette	1 00	
" " 68, W. Jardine	2 00	
Net amount of roll as corrected	1,556 27	
Jan. 19, 1914, Cash to Treas. per P. J. Dunlop		400 00
" " " "		200 00
Mar. 28 " " "		450 00
Apr. 2 " " "		100 00
June 5 " " "		155 00
Sept. 8 " " "		60 97
Arrears as per list		90 80
Balance		99 50
	$1,556 27	$1,556 27

TOWNSHIPS OF HEAD, MARIA AND CLARA.

ARREARS OF TAXES ON 1913 COLLECTOR'S ROLL.

SECTION No. 4.

No.	Name	Con.	Lot	
8	Poirrer, G.	A.	Pt. 20	$7 60
11	Keally, M.	A.	20	5 80
19	Kidder, J	A. B.	5, 6, etc.	6 50
20	Taris, W.	A. B.	7, 8, etc.	6 50
47	Jennings, J. R.	6	33	5 00
51	Jennings, J.	10, 11.	19, 20, 21	2 00
58	Pichette, A.	A. B.	27, 28	1 00
68	Jardine, W.	B.	51	2 00
72	Taris, W.	A. B.	8, 9	10 40
77	Doherty, D.	7	32, 33	6 50
79	Malbeouf, J.	6	34, 35	2 00
81	White, Mrs. J.	7	15	15 00
86	Poirier, C.	A. B.	65, 66	10 50
87	Estate A. Keys	A. B.	60, 61	5 00
89	Williams, W. H.	B.	40	5 00
				$90 80

314 Stair Building,

TORONTO, 31st December, 1915.

TO THE REEVE AND COUNCIL,
Township of Caldwell, Verner, Ont.

GENTLEMEN,—Acting under instructions of the Provincial Municipal Auditor, J. W. Sharpe, Esq., K.C., confirmed by an Order-in-Council, approved by His Honour the Lieutenant-Governor, the 11th day of November, 1915, an inspection, audit or examination of the books, accounts, vouchers and moneys of your township was made.

TOWNSHIP OF CALDWELL.

PETITION.

The audit was made upon the petition of certain ratepayers, addressed to the Provincial Municipal Auditor. The petition requests that an examination be made on account of general dissatisfaction of a body of ratepayers at the way in which the affairs of the Township have been administered. There are no specific allegations made, but general dissatisfaction only. In many respects this dissatisfaction is justified.

SCOPE OF AUDIT.

The inspection and examination under the authority of the Order-in-Council covers the whole of the period from January 1st, 1911, to December 31st, 1915.

ASSETS.

No Township Ledger has been kept, so that a record of the Assets of the Township has not been retained in any permanent form. A close examination of the money spent on Roads and Bridges discloses that very little in the matter of new Assets has

been created in the past five years, the money spent being very little more than the normal upkeep. The Township does not own any municipal building other than a new prison, which was built in the year 1915, and is now shown among the Permanent Assets of the Township in the Balance sheet herewith. The Arrears of Taxes have been carried forward from the lists made by the Collector into the succeeding year's Collector's Roll. These taxes are against the land, and are detailed opposite the names of the ratepayers responsible in the list given on the statements herewith.

Liabilities.

In the Cash Balance Sheet will be shown the amounts payable by the Township to the Schools in the year 1915-16. Outside of this, there was very little information obtainable as to any other Liabilities all orders by the Council having been exhausted, and the informal manner in which Liabilities came before the Council render it impossible to give an exact statement of Liabilities.

Minute Book.

The Minutes of the Council were fully perused by us and found to be in good order. Authority for payment of the Township's liabilities seems to have been taken consistently. There were several cases where authority was not taken, but the amounts were small and in each of those cases an order signed by the Reeve and Township Clerk was produced. This in itself was evidence that the matter had been before the responsible head of the Council at some time. As to whether it was before the Council in a proper and orderly manner it is somewhat difficult to say. Out of the whole of the documents which came into our hands there were twelve original invoices for purchases made by the Council. These invoices were largely from the *Municipal World*, St. Thomas. It seems that if the Council owes money to anyone in the locality the creditor attends a meeting and intimates the fact at that meeting. This should be discontinued and the Council should decline to deal with any matter that does not come before it in a proper way. Invoices should be produced for goods supplied, and unless a pay roll is produced the creditor should give a statement of his account. The largest part of the money spent by the Council has been spent in this informal manner. Orders signed by the Reeve and Clerk are issued on the Treasurer for payment, but it should be made a rule that no order will be issued until the accounts are properly checked and brought before the Council.

Assessment Rolls.

The Assessment Rolls do not bear evidence that any system or method was followed in its preparation in the years 1911, 1912 and 1913. There is, however, in 1914 and 1915 an alphabetical arrangement. An alphabetical arrangement in an assessment has a good many objectionable points; one of the main objections being that when the owner of the property sells there is considerable difficulty in keeping the arrears of taxes, if any, against the property. The outstanding feature in an assessment of this nature should be that the assessment is against the land more than owner of that land. A much better method for taking the assessment is that a geographical arrangement be maintained. In this way there is no difficulty in keeping the arrears of taxes, if any, against the specific property named. In your Assessment Rolls a somewhat more elaborate description of the property would be a considerable help. At present the description is very brief and one finds village property mixed up with farm property in an indiscriminate manner.

The basis of assessment was inquired into fully and the conclusion arrived at is that there is inequality in the assessment of village property over farm property, for instance, a farm which will sell at from $5,000 to say $15,000 would be assessed at say from $2,300 to $2,500, whereas, a store in the village the selling price of which might be $8,000 to $10,000 would be assessed at or around $7,000. The reason for this method of dealing with the assessment is not clear, but the attention of the Council is drawn to these differences.

Dealing with the assessment in detail in conjunction with the Collector's Rolls considerable differences were found. Attention was directed to the reconciliation of the two rolls, it was found that the summaries prepared were not reliable and new summaries were made necessary. In 1911 the Assessment Rolls for resident taxes totalled $457,905.00, whereas, the Collector's Roll totalled $457,867.00, making it necessary to prepare a reconciliation as follows for 1911:

Assessor's Roll—Total Resident Assessment		$457,905 00
Assessment 241 increased $25.00—Assessor's error in addition.	$25 00	
Assessment 253 increased $7.00—Assessor's error in addition ..	7 00	32 00
		$457,937 00
Total Assessment per Collector's Roll $457,867 00		
Assessment 16 decreased $20.00, evidently omitted.... $20 00		
Assessment 248 decreased $50.00, evidently omitted.. 50 00		
	$70 00	
		$457,937.00

The non-resident Assessment and Collector's Roll for non-resident taxes agree for this year. The two Rolls had to be thoroughly checked to ascertain these differences.

1912.

Assessor's Roll—Total Resident Assessment		$454,907 50
Assessment 35 increased		50 00
		$454,957 50
Total Assessment per Collector's Roll	$453,512 50	
Assessment 239 deleted in Collector's Roll 325 00		
" 236 omitted " " 220 00		
" 252 " " " 300 00		
" 256 " " " 400 00		
" 266 " " " 200 00		
	1,445 00	
		$454,957 50
Assessor's Roll—Total Non-Resident Assesment		$29,415 00
Total Assessment per Collector's Roll	$29,215 00	
Assessment 377, $700, taken as $500; thus leaving a difference of	200 00	
	$29,415 00	

1913.

Assessor's Roll—Total Resident Assessment		$487,129 50
Total Assessment per Collector's Roll	$486,429 50	
Assessment 267 omitted $300 00		
Assessment 289 omitted 400 00		
700 00		
		$487,129 50

The Non-Resident Assessment and Collector's Rolls agree for this year.

1914.

Assessor's Roll—Total Resident Assessment		$479,038 00
Assessment 247a added to Collector's Roll	$1,200 00	
Assessment 316 added to Collector's Roll	3 00	
		1,203 00
		$480,241 00
Total Asesssment per Collector's Roll	$480,216 00	
Assessment 16 deducted	25 00	
		$480,241 00

The Non-Resident Assessment and Collector's Rolls agree for this year.

1915.

Assessor's Roll—Total Resident Assessment		$490,615 00
Assessment No. 190 added to Collector's Roll	$75 00	
Assessment No. 226 added to Collector's Roll	100 00	
		175 00
		$490,790 00
Total Assessment per Collector's Roll		$490,790 00

The Non-Resident Assessment and Collector's Rolls agree for this year.

COURT OF REVISION.

1911.

Minute Book 289, Court of Revision Order, Assessment No. 289, Joseph St. George, be reduced from $1,200.00 to $875.00, but the Clerk went one better and reduced this assessment to $825.00. The error was repeated in the Collector's Roll.

Assessment Roll No. 241.—Real property $175.00, buildings $1,175.00, business $250.00, together $1,600.00.

Collector's Roll No. 241.—Gives Real Property Assessment $1,375.00, business $250.00, together $1,625.00, leaving a difference of $25.00 against the person assessed; viz., Alfred Denomme.

Assessor's Roll No. 248.—Belanger Bros., real property $175.00, buildings $1,200.00, business assessment $475.00, together $1,850.00.

Collector's Roll No. 248.—Real property $1,325.00, business assessment $475.00, together $1,800.00, leaving $50.00 of the assessment in favor of Belanger Bros.

Assessor's Roll No. 253.—Johnny Guenette, $325.00 real property, buildings $1,180.00, business $227.00, together $1,732.00. Amount given by assessor $1,725.00. Correction made.

1912.

Minute Book, page 334, Court of Revision instruct that assessment No. 17, Michall Street, W.E. Pt. C.A. be increased from $950.00 to $1,000.00. This was not done and assessment allowed to remain.

Book 334, Court of Revision instructed that assessment 377, R. B. Kirkup, be increased from $500.00 to $700.00, and the correction was made in the Assessor's Roll, but was ignored in the Collector's Roll, consequently the taxes were levied on the original figures of $500.00.

Assessment Roll No. 81.—Donat Coutu, increased $100.00 without authority of any kind.

Assessment Roll No. 83.—Mathias Jolly, decreased $60.00 without authority of any kind.

Assessment Roll No. 243.—Otavia Jolbert, deleted from Roll $550.00, no reason and without authority assigned.

Assessment Roll No. 261.—Alphonse Legendre, decreased $100.00 without authority.

Assessment Roll No. 327.—Joseph Denomme deleted from Roll $350.00. No reason nor authority assigned.

Assessor's Roll No. 35.—Roderick Street, N.E. Pt. 4, 100 acres. Court of Revision reduced this assessment $50.00 from $1,700.00 to $1,650.00, but Collector's Roll did not give effect to instructions and taxes were levied and paid on $1,700.00.

Assessor's Roll No. 236.—Leon Grenache, $550.00 transcribed to Collector's Roll as $330.00, the difference of $220.00 in favour of the person assessed.

Assessment Roll No. 239.—Eugene Perrault, Jr., $325.00 amount transcribed to Collector's Roll, but afterwards deleted. No reason nor authority assigned.

Assessment Roll No. 252.—G. C. Guenette, total assessment $5,475.00 transcribed to Collector's Roll as $5,175.00, leaving a difference of $300.00 in favour of the person assessed.

Assessment Roll No. 256.—Mrs. N. P. Labrosse, business assessment $400.00, not carried to Collector's Roll. No authority, no reason assigned.

Assessment Roll No. 266.—Jules Shnub, business assessment $200.00, not included in Collector's Roll, no authority nor reason assigned.

Assessment Roll No. 386.—Sam Soufrine & Bros., business assessment $300.00 made, but not included in totals of Assessment Roll, nor is it transcribed to Collector's Roll.

1913.

Minute Book 388, Court of Revision instructed that Isidore Gagnon be bracketed opposite the N.E. Pt. Lot 7, in the 1st Concession on the assessment, but this was not done.

Assessment Roll No. 44.—$100.00 of this assessment deleted from Assessor's Roll and initialed by the Clerk, no authority by Court of Revision, which confirmed the assessment among others.

Assessment Roll No. 267.—G. C. Guenette, business assessment $300.00, not included in Collector's Roll; no authority to leave off.

Assessment Roll No. 289.—P. H. Lepine, business assessment $400.00, not included in Collector's Roll.

1914.

Assessment Roll No. 353-A.—A business assessment of $200.00 made upon Max Soufrine deleted from Assessor's Roll.

Assessment Roll No. 19.—Marjorique Brouillette, $1,650.00 transcribed to Collector's Roll as $1,625.00, leaving $25.00 in favour of person assessed.

Collector's Roll has at No. 247.—Paquette Francis C. 4, W. Pt. of 9, 54 acres, $1,200.00. This assessment was not made by the Assessor, but, evidently, added by the Clerk on account of its having been omitted by the Assessor.

Assessor's Roll No. 316.—Bell Telephone Co., Toronto, $697.00, transcribed to Collector's Roll as $694.00; difference $3.00 in favour of company.

Assessment Roll No. 190.—James Larden, total assessment $3,250.00, transcribed to Collector's Roll as $3,325.00, thus giving Township Council $75.00 more of an assessment. No authority, and reason assigned is that Clerk made an error.

Assessment No. 226.—Ovide Miron, total assessment $300.00, transcribed as $400.00 thus giving Township Council $100.00 increased assessment. No authority, and reason assigned is that Clerk made an error.

Collectors' Rolls.

A large number of errors, small in amount, were found in Collectors' Rolls; the details of which are given under respective years as follows:

Collector's Roll, 1911.

Roll No. 3, undercharge 24c. on General School Taxes, should be $2.31, is $2.04.

No. 173, T. Lepage, undercharge 9c., corresponding error in addition.

No. 247, Ed. Cote, overcharge 3c.

Arrears $13.91 owing by Paul Cote were placed on the wrong line of the Collector's Roll and got included with taxes owing by A. H. Payette.

No. 337, Elzer Lebeau, undercharge 37c., reads $48.41, should be $48.78.

Among the non-resident taxes.—No. 99, Joseph Menard, overcharge 1c.

No. 150, Alf. Lapointe, undercharge 52c.

No. 328, Hector Lapointe, undercharge 24c., compensating errors for the last three items were made in the additions.

Calculation of taxes have been very loose. Take any page of the Collector's Roll for this year—almost any one will do—but take page 6 of 1911, it will be found that No. 132 reads $9.99 for Separate School Taxes. This should be $10.45; a difference of 46c. undercharged. No. 133 reads $27.13, should be $27.23, a difference of 10c. undercharge, and No. 140 reads $7.98, and should read $8.53, an undercharge of 55c., and compensating errors in the additions which read $326.46, and should read $327.57. This page is typical of almost any page at which the book is open, only of course, the opposite kinds of transaction are possible. In few words there are, throughout the Roll, an overcharge and undercharge which tested en-bloc, approximate the correct amount of taxes on the assessment given. This, of course, works out unfairly in a great many individual cases, although the ultimate result to the Township is, as has been said, approximately, what it would be if the correct calculations had been made.

Collector's Roll, 1912.

No. 46, Joseph Delcourt, overcharged 5c., also error in addition, total 10c.

No. 82, H. Savoie, undercharged 10c.

No. 88, Arsene Savignac, arrears of $16.67 carried forward as $16.76.

No. 163, David Morin, undercharged $1.00, and No. 172 should have been $1.74, overcharge of 36c., which brings this page correct.

No. 229, Henry Beauchesne, undercharge 10c.

No. 508, Godfroid Matte, overcharged in arrears of taxes 66c.

No. 509, C. Paradis, arrears of taxes carried forward without interest being added, amount of taxes $20.41, interest added it should have been $22.45.

No. 369, Alf. Lapointe, non-resident, arrears of taxes carried forward without interest being added, amount of taxes $61.83, with interest it should be $68.01.

No. 382, P. E. Denomme, overcharge 4c.

Collector's Roll, 1913.

Roll not added up.

Many of the calculations were wrong—some under and some over. To give a list would occupy many pages. The net result as shown on Clerk's summary will be found among the statements herewith.

In carrying forward the arrears, No. 57, Joseph Menard, would appear to be overcharged $5.00.

No. 250, Chas. Perrault, appears to be overcharged $5.51. Some of the sheets containing lists of arrears for this year were not produced as it seems they could not be found.

Collector's Roll, 1914.

Collector's Roll No. 8, Sinai Beaudry overcharged 60c.; compensating error made in additions.

Collector's Roll, page 6, (45255) General School Rate .04c. short in additions, compensating errors in cross additions.

Collector's Roll, page 7, (42405) error of $1.00 in addition of School Taxes, and compensating error in number 163, Severin Lawrence, undercharged $1.00.

Collector's Roll, page 8, (34005) Adelard Lemire, overcharged 20c., compensating error in addition.

Collector's Roll, page 11, (42960) error of 20c. in addition of "Schools" column, compensating error in addition of total column.

Collector's Roll, page 14, (25625) error in addition "General Schools" column 10c., compensating error. I. Tellier overcharged 10c.

Collector's Roll, 1915.

In this Roll a distinct improvement was observed and the errors, if they could be so called, were more or less made up of the fractional part of a dollar, are almost inevitable. The gross amount in any of the sections did not exceed $5.00 for the whole of the Roll.

Tax Collectors.

By-law 140 appoints J. Beaudoin Tax Collector for 1911.

By-law 166 appoints J. Beaudoin Tax Collector for 1912.

By-law 184 appoints Donat Belanger Tax Collector for 1913.

By-law 200 appoints Donat Belanger Tax Collector for 1914 (Donat dies, Arthur Belanger succeeds).

By-law 218 appoints Mrs. Conrad Poitras Tax Collector for 1915.

Tax Collections.

There has not been in use in the past in this Township a Collector's Cash Book. A memorandum made on the side of the Collector's Roll, giving the date and the amount paid was all there was on the books to show that taxes had been paid. It was, therefore, a difficult matter to check the cash collected from taxes to the Treasurer's Cash Book, and it was found necessary to prepare a Collector's Cash Book in order to see whether the taxes which were levied for and paid had been accounted for to the Treasurer. The net result of the test applied to the Collector's Roll was as follows:

1911.	Amount Available for Collection.	Amount Collected.
1911 Arrears, plus 10 per cent.	$1,057 65	$4,350 00
Taxes for Current Year	6,691 95	2,142 89
		211 00
	$7,749 60	$6,703 89
Arrears, 1912	1,003 23	
	$6,746 37	$6,703 89
1912.		
1912 Arrears, plus 10 per cent.	$1,114 69	$3,900 94
Taxes	6,519 14	3,059 69
		159 00
	$7,633 83	$7,119 63
Arrears, 1913	620 01	
	$7,013 82	$7,119 63
1913.		
1913 Arrears, plus 10 per cent.	$688 90	$4,122 89
Taxes	7,952 20	
	$8,641 10	3,334 38
Arrears, 1914	1,028 88	2 00
	$7,612 22	$7,469 27
1914.		
1914 Arrears, plus 10 per cent.	$1,143 19	$3,201 00
Taxes	8,410 66	4,858 55
	$9,553 85	$8,059 55
Arrears, 1915	1,494 28	
	$8,059 57	$8,059 55
1915.		
1915 Arrears, plus 10 per cent.	$1,660 31	
Taxes	7,534 38	
	$9,194 69	

So that it will be seen the amount of the taxes for the Township have been well accounted for. There are slight differences, but there might be over-lapping to some small extent. On the whole, the check is satisfactory. In the course of the examination it developed that a principle was at work, which is essentially wrong. Many of the workmen on the colonization roads owed the Township for Statute Labour. The principle at work was then when a man's name appeared on the pay roll there was deducted from the amount payable to him what he owed for Statute Labour, and the net amount was paid to the workman. This, of course, is wrong, and it does not disclose the collection of the Statute Labour Tax, nor does it disclose the amount which is being spent on the road work. The entries should have been in full; thereby showing the collection of the tax, and also the full amount paid for the road work. This principle was in existence for some considerable time prior to the period when Mr. A. B. Girard took over the Township Cash Book, and it was followed by him. It has now been pointed out to Mr. Girard and in future all matters of this nature will be shown in full.

Arrears of Taxes.

When the Roll is returned by the Collector to the Treasurer the arrears are abstracted from the Roll on certain sheets of paper. This should be discontinued and a proper Arrears Roll made. It will be noted from another part of this report that some of the sheets were missing, and indeed it is somewhat surprising that the papers were held together even as well as they were, as loose sheets will get lost no matter how careful one may be, and in view of the fact that officials change, and the want of safe accommodation throws an unnecessary burden upon the gentleman concerned.

Collection of Arrears of Taxes.

It is provided by Section 109, R.S.O. 1914, Chapter 195:

"That in case taxes which are a lien on land remain unpaid 14 days after demand or notice made or given pursuant to Section 104, 106 or 108, the collector or where there is no collector, the treasurer may by himself or his agent (subject to the exemptions and provisoes hereafter in this section mentioned), levy the same with costs by distress."

The process is a summary one and does not require that the matter of the arrears be brought into court. In other words, when due notice has been given in terms of the Act, the officials named, or more usually the bailiff, can at once proceed to collect by distress. The attention of the Council is directed to the above quoted section of the Act and its sub-sections which give full instructions. In the past the arrears of taxes have been sued for in the Division Court, but this is not necessary. A copy of this Act ought to be in the hands of the officials concerned.

Arrears due to the Corporation of any municipality in a Provincial Judicial District shall be collected and managed in the same way as like arrears due to municipalities and counties, and the treasurer and head of such municipality shall perform the like duties in the collection and management of arrears of taxes as in a county are performed by the Treasurer and Warden.

Officers.

Clerk.—From the 1st of January, 1911, until the 31st of December, 1914, Mr. Edouard Beaudoin acted as Clerk, when he resigned to go to Sturgeon Falls. Mr. Conrad Poitras was appointed and acted for the year 1915.

Treasurer.—From the commencement of the period 1911 until about July, 1913, Mr. E. J. Guenette acted as Treasurer for the Township. From that day until the 31st day of December, 1915, the duties of the office were performed by Mr. A. B. Girard.

Collectors.—In another part of this report the various Tax Collectors appointed by the Council are given. It will be observed that Mrs. Conrad Poitras, wife of the Township Clerk, was appointed for the years 1915-16.

It is provided by the *Municipal Act* R.S.O. 1914, Chapter 192, Section 230, Sub-section 5, that "A member of the Council or the Clerk or Treasurer of the Municipality shall not be appointed Assessor or Collector." When the appointment is being made for the years 1916-17 it might be advisable to appoint some one who does not stand in such close relationship to an officer who is absolutely barred by the Act.

Assessor.—An Assessor is appointed annually, and remarks which have been made on the basis of which the assessment has been made should be brought to the attention of the Assessor before his duties for 1916 are commenced.

Duties of Officers.

The Minute Book in care of the Clerk is commented upon in an early page of this report. The Tax Collector's Roll which has been prepared by the Clerk has also been gone into very fully, and a recommendation is now given that greater care be taken in the preparation of the Collector's Rolls, as many errors have been disclosed in the calculations of taxes. It is only fair to point out, however, that the Collector's Roll for the year 1915 has been prepared accurately; the preceding years were bad.

By-Law Book.—This book has been kept well up-to-date, and the by-laws have been properly engrossed, signed and sealed in the book itself.

Cash Book.—During the years 1911-12, the Treasurer, Mr. E. J. Guenette, kept a scroll Cash book in which the affairs of the Township were recorded until a favourable opportunity arrived when the information could be transcribed to the Cash Book. This is a proceeding that should not be tolerated in any form of business, much less in any form of public business. When it was realized that this method was being followed by Mr. Guenette it became absolutely essential to pay the very closest attention to his work after it had been put in final form. A large number of errors were found in the transcription, but with the exception of those under-noted, not of any very serious amount.

Cash Book 61, on second last line, cash is credited with a payment to E. Beaudoin for $18.40, and on page 62 there is a similar credit for the same amount to the same person on the same order number. Amount not authorized by the Minutes, but there is an order No. 29. This amount, evidently, twice credited to the cash $18.40 is, therefore, recoverable from the ex-Treasurer.

Cash Book 61, on last line, cash is credited with a payment to Odilon Lapraire for $16.50, and on page 62 there is a similar credit for the same amount to the same person—with one order and no authority for the payment. This amount, evidently, twice credited to cash, and it is, therefore, recoverable from the ex-Treasurer.

On July 14th, 1913, E. J. Guenette drew a cheque on his own personal account in payment to Pierre Fortier for $32.18, and credited his Cash Book as having paid this amount out of township funds. The township banking was not very general at this time. He discovered this payment later and requested a refund of the amount, and on an order from the Reeve and Clerk the amount was paid over to him by the Township, thereby making a double payment by the Township of the amount. If Mr. Guenette had not taken credit for the amount in the Township Cash Book he would have been entitled to the refund, but as this was done he was not entitled to the same. He should now, therefore, be called upon to return this money.

Page 91 of the Cash Book, cheque No. 196 drawn in favour of J. B. Castonguay for $52.45 was entered in the Cash Book as $42.45, leaving a difference of $10.00. This amount should be returned to Mr. A. B. Girard, Treasurer, as his Cash Book was credited $10.00 short. It might be a question why an error of this kind was not located at the time it was made, or subsequently by the auditors.

A large cash balance carried by the Treasurer might account for it not being found at the time, but it should have been found by the auditors.

About the middle of the year 1913 the Treasurer, Mr. E. J. Guenette, was asked to resign and Mr. A. B. Girard was appointed in his stead. From the date of Mr. Girard's appointment the financial business of the Township was looked after in a much more business-like manner. The bank columns in the Cash Book were used properly, and a reconciliation of the bank account with the Cash Book was made monthly.

Prior to Mr. Girard's appointment I found it necessary to prepare a bank account from such documents as came into my possession in order to see what was being done with the moneys of the Township. The result, although approximate, gave a fairly good check on banking matters. Treasurer Guenette either did not understand how to use the banking columns in the Cash Book or did not take the trouble to do so. At all events there was nothing in the books to show what was being done between the Township and the bank. Of course, the fact that no branch bank is in Verner may account for some of this, but it would be well that all moneys coming to the Treasurer should be deposited at the earliest possible opportunity.

Reference is now made to the financial statements herewith, from which it will be noted that a large sum of money was in the hands of the Treasurer at the end of the year, and this is accounted for by the fact that the Tax Collector deposited with the Treasurer on the 28th and 30th days of December an amount almost equivalent to the balance on hand. The Cash Book was written up and checked with the vouchers from the 31st of December to the 15th of January, and checked with the vouchers and cash on hand counted, so that at the 31st of December the cash balance was the correct one, as this was taken into account when the books were continued on to the 15th of January.

Bonds.

Treasurer's Bond.—This bond is in the form described by the Canadian Surety, and when request was made for the bond to be produced it could not be found. A duplicate of this bond was produced from the Company and duly executed by the Treasurer and delivered by same to the Clerk, so that this matter is now in order. Particulars of Treasurer's bond are as follows:

No.	Date	Company	Amount	Duration	Prem.	Person	Office
7969	Feb. 11, 1915	Canadian Surety Co.	1,500.00	1 year	$6.00	A. B. Girard	Treasurer

Collector's Bond.—The Collector's bond is on the stock form supplied by the *Municipal World,* Limited, and is executed by all the parties thereto, namely, Mrs. Conrad Poitras as Collector, Omer Poitras and Joseph Lemillard as guarantors. The guarantors are reputed to be well able to take care of the capital sum of $1,000.00 guaranteed thereunder, and as settlements between the Collector and Treasurer take place once in every two weeks the amount is sufficient.

The Clerk is not bonded. No money, however, passes through his hands, but it might be considered advisable to have a small bond in order to protect the Township against loss of papers, documents, etc., and it is recommended that this be attended to forthwith.

Insurance.

The Township does not own any building or buildings requiring insurance, except, perhaps, the new jail which was built in 1915, and which will be found among the assets of the Township. The building is heated in winter and it might be subject to fire, on this account and also on account of the action of an unsearched prisoner for matches, etc., it would be advisable to place a small sum of insurance on this building forthwith.

Public School No. 1.

The policy on this school expired February 11th, 1913, and was not renewed. A letter intimating the fact to the Treasurer was sent and the school is now covered by Policy No. 1638096 in The Law Union and Rock Insurance Company, Limited, dated the 15th day of January, 1916, for three years, expiring the 9th day of January, 1919. The amount of insurance is $700.00. Premium $11.90. The school building only is insured.

Public School No. 4.

The expired Policy No. 7552, Algoma Mutual Fire Insurance Company has been replaced by Policy No. 8776 of the same Company, dated 22nd January, 1916, for three years, expiring the 20th of January, 1919. The amount for which the school building is insured is $400.00.

Law Costs.

A close scrutiny was placed on the sums of money spent by the Council on law costs in the last five years. These consisted principally of Division Court costs for the recovery of taxes, which will be recovered from the debtors when payment is made of the taxes for which the suit was entered. One item of $20.15 appears to have been the costs incurred by the Township in connection with the early closing by-law. A by-law was passed by the Council regulating the closing of the stores in the Village of Verner. This by-law was attacked by Mrs. Labrosse and the court found that the by-law was *ultra vires* of the Council in the circumstances, and I am advised that an order was made that the Township should bear the costs of the action. I have not been able to find the order among the papers of the Township. At the time the order was made a recommendation was given, viz., that the Council should recover the amount from the merchants interested, but nothing was done in this respect.

Debenture Register.

At present the records relative to debentures are kept in an ordinary note book. It would be better if these were kept in the regular way in a Debenture Register, which can be had from the usual source.

Pay Rolls.

These are used chiefly for work on colonization roads. The manner in which these pay rolls have been paid has varied considerably. In 1911-12 the amount was entered in the Cash Book *en bloc*. In 1913, when Mr. A. B. Girard took over the accounts, each payment was entered by itself.

In 1915 the amounts of the orders issued by the Council were credited to the cash, making approximately three entries in the Cash Book. The method adopted in 1913-14, where individual payments were credited to the Cash Book, is thought to be the better way, and in addition to issuing orders a properly certified pay roll should accompany the order to the Treasurer. These pay rolls do not bear the certificate of the foreman actually employed in charge of the work; usually the only signature on the pay roll, in the matter of certification is that of the Township Clerk, who is not in a position to know the facts. The foreman responsible for the work is the person who should certify as to the accuracy of the pay roll.

The Safe.

There is no accommodation whatever for papers belonging to the Township, and it was rather surprising to find that books and papers were being placed in a grocery box. The procuring of a safe should at once have the attention of the Council, as it is not fair to the ratepayers that their documents and books should be left in such an unprotected state. The Township is fortunate is so far as Mr. A. B. Girard has a very excellent safe which he allows the Township to have the use of for certain of their papers and documents, but the requirements of Mr. Girard's own business necessitates the greater part of the space available, and the Council should see at once that some steps are taken to put the matter on a proper basis.

Police Magistrate.

The books of the Police Magistrate were examined and audited. The settlement of the fines levied in the last two years was made to the Treasurer prior to the closing of the accounts for 1915.

Banking.

It will be noted from the above that very little banking was done in the years 1911-12, and only in the year 1913 were the funds of the Township placed with a bank. Since that time the funds have been deposited at intervals with the Royal Bank at Sturgeon Falls, and since the work of the Treasurer of the Township was taken over by Mr. Girard matters are well attended to.

From letters and documents which came into my hands it was quite apparent that the finances of the Township were getting rapidly into a state of confusion. Letters of a most peremptory nature from the bank requesting the Treasurer to make provision for the Township's indebtedness were most urgent prior to the change in the Treasurership.

Auditors.

By-law 147, 1911, appoints Camille Bringer and Nap. Beaudry.
By-law 171, 1913, appoints Arthur Belanger, and Conrad Poitras.
By-law 193, 1913, appoints Arthur Belanger and Jos. L. Comtois.
By-law 208, 1914, appoints L. H. Belanger, and Jos. L. Comtois.

There was no evidence that the books had been audited other than a brief certificate at the end of the year. None of the vouchers, cheques or other documents had been stamped as is required by the Statute, and in fact no one would

know that the audit work had been done on the books from any evidence contained in the books themselves. Some of the errors found by the present audit are given elsewhere in this report. There were others of small amount with which it is unnecessary to load up this report, as the amounts were small and as often in favour of Township as against it. The kind of error found was the order for payment would be for one amount and the payment itself would be for a few cents over or a few cents under. The errors so found were ignored altogether by the Auditors. The Collector's and Assessor's Rolls do not seem to have come under their observation at all. The Minute Book and By-law Book do not appear to have come under their observation either.

Public Schools.

The Township is divided into five School Sections, Nos. 1, 2, 3, 4 and 5, and one Separate School. The books for all those schools were submitted and audited. They appear to be fairly well kept, but they do not conform to any standard. Some have the Regulation School Cash Book and others have an ordinary Cash Account. The books could be improved as regards the receipts, if, when the Secretary-Treasurer receives a payment from the Township Treasurer, were to say "Township, Council Order No., on account, the amount received, and date upon which it is received." At present it is not possible to tell from the books just how much has been received upon each order issued by the Township. Had this method been adopted, the circumstances which have arisen in School Section No. 1 would have been avoided.

Minute Books.

As a general rule specific authority is not taken in the minutes for payments made by the Treasurer. The payments are, however, small, with the exception of salaries. It would also be well to minute the appointment of teachers, this, as a rule, is not done. In School Section No. 1 the following facts have come to light:

Township Minute Book, page 393, 5th July, 1913, authorizes a loan out of Township funds of $200.00 to School Section No. 1 at 8 per cent. interest.

Township Minute Book, page 30, 6th June, 1914, authorizes a loan of $100.00 out of Township's funds to School Section No. 1, with interest at current rates.

Township Minute Book, page 36, 3rd September, 1914, authorizes a loan of $250.00 for School Section No. 1, which sum it borrowed on its own credit from Joseph Guenette and repaid same on September 1st, 1915. This money was paid to School Section No. 1 when received by the Township.

These sums were paid by the Council out of general funds in order to carry on the payments for the school. The school secretary should have included the amount with the immediately succeeding estimates, and also in his requisition, in order that the amount should be brought back into general township funds.

It is interesting to see what funds were authorized and what were received by the Treasurer in the years under consideration.

Year.	Amount of Order.	Amount Paid.
1911	$1,318 13	$1,318 13
1912	1,158 25	1,458 28
1913	1,221 22	1,321 22
1914	1,822 00	2,447 68
1915	2,205 53	1,620 00
	$8,225 13	$8,165 31

It will thus be seen that this school has been persistently over-drawing the amount authorized for them, although 1915 shows less drawn than the amount authorized, yet that amount is intended to cover the years 1915 and 1916, as another order will not be issued until about the middle of 1916. Consequently, if the school is to be kept within bounds the whole of its financial transactions must be carried on on $585.53, and approximately that amount will be required before Easter. The money paid by the Council to the school section has, undoubtedly, been spent on the legitimate purposes of the school section, but it will be noted that the whole Township has been called upon to pay $550.00 for this school, which is, of course, wrong. This amount should be borne by the ratepayers of School Section No. 1, and it will be necessary that provision be made for the refund in the estimates for 1916-17. When these estimates are being considered it must be noted that interest on the loans will also have to be allowed for at 6 per cent., not 8 per cent. as provided by R.S.O. Chap. 266, Sect. 73, sub-section (*p*), where authority is given the Board of Trustees to borrow money for the specific purposes mentioned in the sub-section.

Conclusion.

The attention of the Council is called to Section 15, Chapter 200, R.S.O. 1914, which requires that the recommendations made in this report be carried into effect.

I have to thank the Reeve, Council and the officials for the business courtesies extended to me.

John Dunbar.

123 Bay Street, Toronto.
31st December, 1915.

TOWNSHIP OF CALDWELL, ONT.

Cash Balance Sheet.

Liabilities.

Overdraft, Royal Bank of Canada, Sturgeon Falls		$41 46
Township Note Discounted, Royal Bank of Canada, Sturgeon Falls, Ont.	$2,000 00	
Interest Accrued on above Note to 31st December, 1915	68 30	
		2,068 30
Orders Issued by Council Unpaid:		
School Section No. 1	$1,296 03	
" " 2	250 70	
" " 3	365 35	
" " 4	404 28	
" " 5	276 62	
Separate School Section No. 2	272 94	
		2,865 92
General Orders per list		81 75
Births, Deaths and Marriages—Registration Fees		25 00
War Tax Levy		537 60
Assets Over Liabilities		1,872 74
		$7,492 77

Assets.

Cash on hand		$1,308 28
Municipal and School Taxes, 1915:		
Resident	$4,261 83	
Non-resident	393 87	
		4,655 70
Arrears of Taxes:		
Resident	$1,138 39	
Non-resident	390 40	
		1,528 79
		$7,492 77

TOWNSHIP OF CALDWELL.

Balance Sheet.

Permanent Assets and Deferred Liabilities, as at 31st December, 1915.

Liabilities.

Debentures:	
School Section No. 2	$336 46
" " 3	679 30
" " 5	193 24
Assets in excess of liabilities, being ratepayers' and school supporters' investment	6,291 00
	$7,550 00

Assets.

School Property and Buildings:	
Section No. 1	$1,900 00
" 2	1,075 00
" 3	1,200 00
" 4	800 00
" 5	800 00
Separate School No. 2	1,200 00
New prison buildings and real estate	300 00
Road machinery and tools	125 00
Real estate, 1 lot	150 00
	$7,550 00

TOWNSHIP OF CALDWELL.

Debenture Statement as at December 31st, 1915.

Purpose.	By-Law No.	Original Amt. of Debenture.	Date When Issued.	No. of Debentures.	Amt. of Back Debenture.	Rate of Int.	Amt. of Principal Paid in 1915.	Amt. of Int. Paid in 1915.	Balance of Principal Unpaid Dec. 31st 1915.	
Schools:										
Section No. 2	135	$800 00	3rd June, 1911	8	$128 82	6%	$102 04	$26 78	$386 46	
Section No. 3	134	1,000 00	3rd June, 1911	10	135 86	6%	95 77	40 09	679 30	
Section No. 5	80	600 00	4th May, 1907	8	96 62	6%	.....	.....	193 24	Payees made no demand for payment in 1914 or 1915. Holders unknown to present Township Treasurer.

TOWNSHIP OF CALDWELL, ONT.

ABSTRACT.

CASH RECEIPTS AND DISBURSEMENTS.

Receipts.

Cash on hand and in bank, 1st January, 1915	$1,788 61
Taxes collected	7,695 14
Drains and water courses	89 70
Fines per police magistrate	11 50
Licenses, proportion per Inspector French	126 00
Government grant, Colonization Roads	422 98
Loans:	
Royal Bank of Canada, Sturgeon Falls	2,500 00
	$12,633 93

Disbursements.

Salaries	$461 50
Police wages	73 60
Stationery and printing	122 21
Roads and bridges, maintenance	529 29
Sidewalks	81 76
Grants	240 00
Election expenses	12 00
Repayment of loans	3,750 00
Interest on loans	86 69
Winter road work	9 87
Drains and water courses	244 25
New prison	189 24
Board of Health	126 58
Debentures paid	264 68
Provincial Municipal Audit	250 00
School Section No. 1	1,620 00
" " 2	484 43
" " 3	475 25
" " 4	323 00
" " 5	282 62
Separate School Section No. 2	384 40
Rents	15 00
Legal expenses	4 00
Tax collections	207 39
Taxes, refunds	20 10
Colonization Roads	998 24
Miscellaneous	69 55
Balance in hands of Treasurer, 31st December, 1915	1,308 28
	$12,633 93

TOWNSHIP OF CALDWELL.

DETAILED STATEMENT OF RECEIPTS AND DISBURSEMENTS, 1ST JANUARY TO 31ST DECEMBER, 1915

Receipts.

Cash on hand and in bank		$1,788 61
Resident taxes	$5,433 01	
Non-resident taxes	46 18	
Arrears	2,215 95	
		7,695 14
Drains and water courses		89 70
Fines, per Police Magistrate		11 50
Licenses, proportion for Inspector French		126 00
Government grant, Colonization Roads		422 98
Loans:		
Royal Bank of Canada, Sturgeon Falls		2,500 00
		$12,633 93

TOWNSHIP OF CALDWELL.

DETAILED STATEMENT OF RECEIPTS AND DISBURSEMENTS, 1ST JAN. TO 31ST DEC., 1915.

Disbursements.

Salaries.

1915.			
Jan. 22	Ed. Beaudoin, Clerk	$5 00	
Mar. 8	A. B. Girard, Treasurer, 1914	60 00	
" 11	Jos. L. Comtois, Auditor	12 50	
Apr. 8	C. Poitres, Clerk, 1914	30 00	
May 8	Donat Coutu, Assessor, 1915	70 00	
" 6	L. H. Belanger, Auditor, 1914	12 50	
June 6	Jos. Leclaire, Reeve	15 00	
" 6	C. Poitres, Clerk	30 00	
Nov. 10	C. Poitres, Clerk	30 00	
Dec. 20	A. B. Girard, Treasurer, 1915	60 00	
	Jos. Leclaire, special meeting	2 25	
" 28	C. Poitres, Clerk	50 00	
	Jos. Champagne, Councillor	22 75	
	S. Bouffard, Councillor	22 75	
	Arthur Forget, Councillor	22 75	
	Jos. Leclaire, Reeve, balance	14 25	
	Jos. Champagne, special meeting	1 75	
			$461 50

Police Wages.

1915.			
Feb. 13	Omer Legault, Constable	$15 00	
Mar. 8	Omer Legault, Constable	10 00	
Apr. 8	Omer Legault, Constable	10 00	
May 7	Omer Legault, Constable	10 00	
June 8	Omer Legault, Special Constable	16 60	
	Zenon Cloutier, Special Constable	3 00	
	Joseph Poitres, Special Constable	3 00	
	Eugene Perrault, Special Constable	3 00	
	Eli Brunet, Special Constable	3 00	
			73 60

Stationery and Printing.

1915.			
Feb. 1	*Municipal World*, St. Thomas	$46 43	
" 1	*North Bay Times*, advertising	7 00	
" 1	*Sturgeon Falls Advertiser*	6 25	
Mar. 8	*Municipal World*, St. Thomas	13 89	
July 31	" " "	23 54	
June 7	" " "	16 02	
Sept. 8	" " "	7 08	
Nov. 2	Bellanger Bros., time books	2 00	
			122 21

Roads and Bridges—Maintenance.

1915.			
Feb. 22	Jos. Venne, labor, Division 12	$5 25	
Mar. 8	A. B. Girard, nails, tools, etc.	20 55	
" 15	Delphis Bouffard, lumber	68 96	
Feb. 27	Zotique Bertrand, labor, Road 12	3 50	
Mar. 19	Zenon Riberdy, labor, Road 12	7 00	
Apr. 12	Sam. Gelinas, lumber	$119 00	
May 8	Alfred Denomme, labor, Road 2	4 50	
" 8	Elie Brunet, labor, Road 2	1 25	
" 7	H. Provencher, labor, Road 2	2 25	
Aug. 11	J. Dutrisac, labor, Road 2	12 00	
July 7	Generoux Asselin	23 51	
June 14	E. Beauchesne, 1 day with team	3 00	

July	7	F. St. Amour, labor	6 25	
"	19	Thomas Comtois, nails, etc.	8 25	
"	9	A. B. Girard, 2 grub hoes	2 00	
"	9	S. Leduc, pay roll	10 38	
Oct.	2	Arthur Piche, labor, Road 8	11 82	
Nov.	2	Chas. Perrault, labor	38	
"	2	Anselme Gelinas, labor	87	
"	2	Francis St. Amour, 1 day with team	3 00	
"	2	Alfred Denomme, labor	1 00	
"	2	Joseph Tourigny, repair road machine	1 50	
"	2	Chas. Rainville, bridge repair	2 00	
"	2	Joseph Tourigny, repair road machine	1 40	
"	2	Aut. Gelinas, lumber	2 34	
"	2	H. Provencher, labor	1 50	
"	T.	Roussel, labor	1 00	
"	2	O. Cadeau, labor	1 00	
"	2	S. Paquette, labor	1 00	
"	2	Joseph St. George, labor	90	
"	2	E. Beauchesne, labor	3 00	
"	2	Jos. Remillard, labor	1 20	
		D. Lacase, labor	2 00	
		Joseph Piere, repairing bridge	2 00	
		E. Beauchesne, drawing sand	3 00	
		F. St. Amour, repairing bridge	2 00	
		F. Pilon, sawing lumber	8 60	
		E. Beauchesne, drawing sand	3 00	
		Jos. Guenette, repairing tools	5 75	
		Thos. Comtois, nails, etc.	2 60	
		Joseph Cote, overseer	30 00	
		E. Beauchesne, drawing sand	4 50	
		A. B. Girard, lumber	54 17	
		H. Provencher, labor	1 50	
		Joseph Dutrisac, labor	1 00	
Feb.	22	Jos. Benvit, labor	10 88	
"	22	A. Parement, labor	87	
"	22	R. Labrosse, labor	18 20	
		Albert Herard, repairing bridge	50	
		H. Provencher, labor	1 88	
		Zenon Cloutier, labor	7 00	
		Arthur Bazinet	6 00	
		F. Pilon, lumber	10 00	
		T. Comtois, nails, etc.	28	
		Alex. Lefebvre	22 00	
				529 29

Sidewalks.

1915.				
Jan.	30	Ernest Beauchesne, cartage of lumber	$1 90	
Mar.	5	F. Pilon, lumber	10 00	
June	8	Elie Brunette, labor	6 75	
"	7	S. Pillard, labor	6 25	
"	8	H. Provencher, labor	11 70	
"	8	F. Lemire, labor	8 75	
"	9	Dennis Sheffard, labor	6 88	
"	8	Theop. Roussel	3 75	
Feb.	26	Theop. Roussel, labor	75	
Nov.	2	F. Lemire, labor	3 13	
"	2	D. Sheffard, labor	3 13	
"	2	S. Paquette	4 38	
"	2	H. Provencher	3 00	
		T. Roussel, labor	2 13	
		F. Lemire, labor	1 88	
"	10	F. Lemire, labor	1 88	
		Adolph Comtois	1 25	
		Hermidas Provencher, labor	3 00	
		Joseph Comtois, labor	1 25	
				81 76

Grants.

1915.			
	Verner Agricultural Society	$35 00	
Feb. 8	Sick Children's Hospital, Toronto	5 00	
Aug. 20	Canadian Patriotic Fund	100 00	
Oct. 21	British Red Cross Society	50 00	
" 6	Verner Agricultural Society	50 00	
			240 00

Election Expenses.

1915.			
	Victor Rainville, Polling Clerk	$2 00	
	E. J. Guenette, rent of hall for nomination	10 00	
			12 00

Repayment of Loans.

1915.			
Jan. 14	Royal Bank, Sturgeon Falls	$2,000 00	
Feb. 26	Royal Bank, Sturgeon Falls	1,000 00	
Sept. 1	Joseph Guenette, Verner	250 00	
Nov. 5	Royal Bank, Note 17	500 00	
			3,750 00

Interest on Loans.

1915.			
Jan. 14	Royal Bank, Sturgeon Falls	$32 25	
Feb. 26	Royal Bank, Sturgeon Falls	12 90	
Sept. 1	J. Guenette, Sturgeon Falls	18 73	
Oct. 11	Royal Bank on Note No. 15, renewed	18 00	
Nov. 5	Royal Bank on Note No. 17	3 00	
	Sundry bank charges for year	1 81	
			86 69

Winter Road Work.

1915.			
Jan. 29	Pierre Ayotte, labor, and with team	$3 50	
Feb. 9	J. B. Castonguay, labor	1 00	
Mar. 15	H. Provencher, labor	4 50	
" 26	A. Lefebvre, labor	35	
" 6	Joseph Hetu, labor	52	
			9 87

Drains and Water Courses.

1915.			
Feb. 1	McAustin & Henderson, engineer's fees and Sabowini award	$69 10	
Aug. 11	J. Art. Forget, labor	14 00	
July 6	McAustin & Henderson, engineer's fees and St. Amour award	76 40	
Sept. 7	H. Bertraud, labor	20 00	
Oct. 6	McAustin & Henderson, engineer's fees	18 75	
Nov. 13	Jos. Dutrisac, labor	2 00	
" 16	David Lacasse	5 50	
Dec. 4	Joseph Leclaire	9 50	
	Ant. Gagnon St.	12 00	
Nov. 20	J. Gagnon	17 00	
			244 25

New Prison.

1915.			
	Alfred Denomme, prison contract	$168 24	
	Joseph Champagne, prison fixture	1 30	
	Leger Leclaire, painting prison	6 00	
	Joseph Champagne, prison fixture	1 00	
	Elie Brunet, work at prison	1 00	
	A. B. Girard, fixtures for prison	6 70	
	Mrs. W. Beauchesne, stove for prison	5 00	
			189 24

Board of Health.

1915.				
		Treasury Board, Provincial Health Officer	$87 58	
No.	2	A. Lambert	2 00	
		C. Poitres, Secretary, salary	4 00	
		Dr. J. A. Clairoux	29 00	
		Joseph Leclair	4 00	
				126 58

Debentures Paid.

1915.				
Dec.	21	Public School Section 2	$128 82	
"	21	Public School Section 3	135 86	
				264 68

Provincial Municipal Audit—Five years.

1915.				
Dec.	21	John Dunbar, audit for 5 years	$250 00	
				250 00

PUBLIC SCHOOLS.

School Section No. 1.

		E. J. Guenette	$450 00	
		" "	50 00	
		" "	450 00	
		" "	270 00	
		" "	400 00	
				1,620 00

School Section No. 2.

		A. Limoges	$100 00	
		C. Poitres	284 43	
		C. Poitres	100 00	
				484 43

School Section No. 3.

		C. Bringer	$50 00	
		Miss Sylvester	120 00	
		C. Bringer	30 00	
		C. Bringer	15 25	
		Miss Sylvestre	120 00	
		May Allan	100 00	
		C. Bringer	40 00	
				475 25

School Section No. 4.

		Jos. Aubin	$50 00	
		" "	100 00	
		" "	173 00	
				323 00

School Section No. 5.

		M. J. Steep	$157 62	
		" "	100 00	
		" "	25 00	
				282 62

Separate School Section No. 2.

		A. Limoges	$234 40	
		" "	150 00	
				384 40

Rents.

1915.				
Jan.	30	Ernest Buchesne, rent of lock-up	$5 00	
Apr.	24	" " "	5 00	
June	14	" " "	5 00	
				15 00

Legal Expenses.

1915.				
Feb. 1	Division Court Clerk, costs		$2 00	
	Division Court Bailiff		2 00	
				4 00

Tax Collections.

1915.				
Feb. 17	J. A. Belanger, commission		$131 42	
Mar. 8	A. B. Girard, commission, 1914 taxes		58 59	
	Mrs. C. Poitras, commission, 1915		17 38	
				207 39

Taxes Refund.

1915.				
	Treffle Gagnon, overcharged		$19 10	
	Joseph Tourigny, poll tax refund		1 00	
				20 10

Colonization Roads.

1915.				
Aug. 11	Pay roll		$142 65	
July 9	"		824 72	
Sept. 8	"		30 87	
				998 24

Miscellaneous.

1915.				
Feb. 13	Ed. Beaudoin, express		$0 25	
" 8	Canadian Surety Co., *re* Treasurer's bond		6 00	
Mar. 8	A. B. Girard, postage, etc.		15 37	
Nov. 2	Constables' badges		4 00	
	Leger Leclaire		1 88	
	Pierre Guilmet		1 88	
	Belanger Bros.		75	
	A. B. Girard, postage, etc.		9 12	
	C. Poitras, selection of jurors		2 00	
	Postages		5 50	
	Joseph Leclaire, selection of jurors		2 00	
	E. Beaudoin, registration of births, etc.		20 80	
				69 55
				$11,325 65
	Balance in hands of Treasurer			1,308 28
				$12,633 93

PUBLIC SCHOOLS.

Section No. 1.

Balance on hand 1st January 1915			$117 38
Received from Township Council			1,620 00
			$1,737 38

Salaries.

Aurelia Guenette, teacher		$285 00	
V. Genest, teacher		195 00	
Amerilda Cote		165 00	
Ida Cote		395 00	
S. Pierre		120 00	
B. Chaprond		140 00	
A. Giguere		110 00	
		$1,410 00	
E. J. Guenette, secretary	$15 00		
" Postage, etc.	7 36		
" Bank exchange	35		
		22 71	

School Equipment.			
Belanger Bros., coat hooks	$ .30		
Belanger Bros., chairs	1 95		
		2 25	
Educational Supplies.			
Omer Legault, sundries		2 95	
Fuel.			
Siffroid Bouffard	$39 82		
S. Lawrence	10 50		
		50 32	
School Repairs.			
Leger Leclaire, sundries	3 50		
Elie Brunet, labor	5 50		
Jos. Champagne, labor at fence, etc.	13 80		
		22 80	
Cleaning, etc.			
Leger Lecerc	$24 00		
C. Dufresne	58 00		
		82 00	
Balance in hands of treasurer		144 35	
		$1,737 38	$1,737 38
By balance 31st December 1915			144 35
Section No. 2.			
Balance			$3 00
Received from Township			100 00
			$103 00
Salaries.			
T. Giroux, teacher		$75 00	
A. Limoge, secretary to March 23rd		2 75	
		75 75	
Fuel.			
G. Robert		11 00	
Insurance.			
A. Legendre		11 00	
School Equipment.			
A. Legendre, desk	$5 35		
" freight	1 14		
" ladder	1 00		
		7 49	
Cleaning, etc.			
I. Gagnon	2 00		
E. Lecompte	2 00		
A. Limoge, telegrams (2)	65		
		4 65	
Loans.			
A. Limoge, cash advanced 1914	30 86		
A. Limoge, interest	6 00		
		36 86	
Balance owing to Treasurer, March 23, 1915			45 75
		$148 75	$148 75
Section No. 2.			
Received from Township, March 26th, 1915			$284 43
Received from Township, December 23rd, 1915			100 00
			$384 43
Salaries.			
Eva Pilon		$140 60	
Mrs. Lamarche		150 00	
		$290 60	
C. Poitras, secretary, salary and postage		11 25	

Loans and Advances.			
A. Limoges, balance due		45 75	
Educational Supplies.			
Omer Legault, sundries		1 30	
Cleaning, etc.			
C. Poitras, brooms	60		
S. Lecompte	2 50		
J. Ducharme	3 00		
H. Cazabon	1 50		
Belanger Bros.	1 00		
		8 60	
Prizes.			
L. Cazabon, book	2 00		
J. B. Rolland & Fils, book	4 13		
" " express	50		
		6 63	
Advertising.			
La Droit, Ottawa		2 00	
Balance in hands of treasurer		18 30	
		$384 43	$384 43
By Balance			18 30

Section No. 3	
Balance on Hand	$19 70
Township	475 25
Interest received	2 13
	$497 08

Salaries.			
Lucille Sylvestre, teacher		$280 00	
Miss Allan, teacher		100 00	
C. Bringer, secretary		12 00	
			$392 00
Cleaning, etc.			
C. Bringer, postage	$0 25		
Omer Poitras	1 00		
David Lecasse	13 05		
Thomas Comtois	.66		
Delvina Legault	12 00		
Aurelia Beauchamp	6 00		
Joseph Beauchamp	1 75		
		$34 71	
Educational Supplies.			
Omer Legault		.75	
Firewood.			
Delphis Legault		15 00	
Prizes.			
Arthur Piche		11 00	
		$453 46	
In hands of treasurer		43 62	
		$497 08	$497 08
By Balance 31st December 1915			$43 62

Section No. 4.	
Balance on hand	$30 50
Received from Township	323 00
	$353 50

Salaries.			
M. L. Desormeau, teacher		$245 00	
Jos. Aubin, secretary		10 00	
		$255 00	
Loan.			
A. Legendre		15 50	
Firewood.			
Jos. Contu	$10 35		
Chas. Trudel	10 35		
		20 70	
Educational Supplies		2 95	
Cleaning.			
Mrs. Aubin	1 50		
Mrs. Gagnon	4 00		
Jos. Contu	7 75		
Jos Gagnon	9 68		
Jos. Aubin, brooms	75		
Jos. Aubin, postage	11		
		23 79	
		$317 94	
In hands of treasurer		35 56	
		$353 50	$353 50
Section No. 5.			
Balance on hand 1st January, 1915			$34 76
Received from Township			282 62
Equipment grant			16 80
Government grant			122 50
Special grant			50 00
Interest on Bank Deposits			84
			$507 52
Salaries.			
May Smith, teacher		$216 43	
Clarie Smith, teacher		35 00	
Miss Milroy, teacher		165 55	
		$416 98	
M. J. Steep, secretary	$10 00		
M. J. Steep, postage, etc.	1 53		
		11 53	
School Equipment.			
Chalk	$1 00		
Knobs, screws, etc,	73		
Books	2 53		
		4 26	
Cleaning, etc.			
Brushes, brooms, etc.	$1 50		
Washing	2 00		
Caretaker	7 00		
Whitewashing	2 00		
Oil	80		
Soap	25		
		13 55	
Fuel.			
P. J. Steep		11 00	
Repairs.			
R. Steep	$1 00		
Dermont O'Brine	1 00		
D. Steep	9 50		
Glass	10		
A. Lefebvre, bolts, etc	1 55		
		13 15	

School Furniture.			
New desks and cartage	$13 97		
New blinds	90		
		14 87	
Advertising.			
Mail and Empire	$9 28		
Ottawa *Evening Citizen*	4 22		
		13 50	
Balance in hands of Treasurer		8 68	
		$507 52	$507 52
By balance			$8 68

SEPARATE SCHOOL.

Section No. 2.			
Balance on hand as at 31st December, 1913			$54 96
Township taxes			384 40
Sundries, fees, etc.			12 50
			$451 86

Payments.

Salaries.			
Amerilda Cote, teacher		$130 00	
R. A. Dupuis, teacher		280 00	
		$410 00	
A. Limoges, secretary		10 00	
Interest and Insurance.			
A. Limoges, interest on loans	$6 00		
Mount Royal Assurance Co.	8 50		
		14 50	
School Equipment.			
R. A. Dupuis, atlas	$5 00		
Ernest Charest	3 00		
		8 00	
Fuel.			
L. O. Beauparlant		12 00	
Cleaning and Repairs.			
Maurice Ducharme	$12 65		
Leo Boudreau	4 00		
Cecile Ducharme	3 50		
Ans. Ducharme, broom and pail	70		
		20 85	
Balance owing to secretary			23 49
		$475 35	$475 35

COUNCIL'S ORDERS FOR PAYMENT.

Outstanding, 31st December, 1915.	
Alfred Robert	$1 75
Pierre Ayotte	21 00
C. J. Guenette, rent	59 00
Schools—1 E. J. Guenette, secretary	1,296 03
2 C. Poitres, secretary	250 70
3 C. Bringer, secretary	365 35
4 J. Aubin, secretary	404 28
5 M. J. Steep, secretary	276 62
S. S.—2 Alfred Limoges, secretary	272 94
Total	$2,947 67

TOWNSHIP OF CALDWELL.

ARREARS OF TAXES.

CARRIED FORWARD TO 1915 ROLL.

Collector's Roll No.	Resident.	Amount.	
16	Zotique Bertraud	$39 83	
18	Joseph Bazinet	20 07	
65	Arthur Cote	50 63	
73	Ernest Charet	56 79	
83	Joseph Ducharme	26 84	
120	Donat Filiatrault	8 61	
123	Joseph Gelinas	126 44	
125	Anselme Gelmas	64 45	
158	Philibert Gingras	105 60	
165	Mathais Joly	30 53	
183	George Levac	20 81	
187	Simeon Leduc	21 33	
192	Cyprien Lefebvre	21 60	
193	Alexis Lefebvre	131 77	
204	Adelard Lemire	20 40	
215	Louis Leclair	18 34	
229	Ferdinand McMurray	5 75	
237	Pierre Nadeau	53 78	
247	Charles Peerault	24 18	
276	Ernest Rehault	12 96	
280	Ovila Robert	17 38	
283	Alfred Robert	17 15	
286	Damace Roberge	21 64	
287	Joseph Roberge	30 65	
288	Henry Rhault	39 78	
295	Francis St. Amour	1 77	
297	E. St. Amour	18 48	
300	August Savignac	11 70	
329	James Walker	68 69	
330	John Walker	50 44	
333	Hilaire Chreitin	22 84	
385	Damas Deslongchamps	11 03	
347	Adelard Lachance	39 48	
348	Joseph Lacoursier	75 90	
351	Alfred Lapointe. Verner	6 79	
352	Hector Lapointe	50 83	
353	Z. Lefebvre	50 88	
355	Annie Legault	3 64	
356	Michaud & Levesque	10 79	
358	Joseph Menard	47 88	
359	Henry Menard	11 50	
360	Gadfroid Matte	30 14	
363	Jules Phillipe	13 85	
364	Choise Phillipe	14 85	
			$390 40
			$1.528 79

TOWNSHIP OF CALDWELL.

TAX ARREARS.

Collector's Roll No.	Name.	Amount.
1	John Allard	$36 98
3	Joseph Aubin	25 09
6	Pierre Ayotte, balance	69 56
8	Genereux Asselin	11 34
16	Zolique Bertrand	13 40

Collector's Roll No.	Name.	Amount.
18	Joseph Bazinet	17 43
21	Ovila Beloc	8 77
25	Francis Burgeois	8 47
26	Gideon Beauparlant	12 23
27	Louis Beauparlant	63 41
34	Wilford Benoit	2 40
39	Ovila Bouillete	8 38
41	Stanilas Boucher	23 48
42	Francis Beaudry, balance	3 31
43	Nap. Beaudry	38
44	Sinai Beaudry	11 34
47	Sifroid Bouffard	77 59
49	Mrs. Joseph Beaudoin	12 83
58	Esdras Contu	28 87
59	Joseph Contu	23 98
62	Jos. L. Comtor's	116 02
64	Paul Cote	99 95
65	Arthur Cote	18 47
66	Joseph Cote, balance	39 75
68	J. B. Castonguay	6 62
71	William Champagne	34 27
72	J. A. Clairoux, balance	5 01
73	Ernest Charet	32 31
74	Omer Charbonneau	7 54
83	Joseph Ducharme	32 46
85	Edward Ducharme	6 80
88	W. Ducharme, balance	3 66
94	A. Duchesne	20 30
99	Joseph Dutrisae	28 93
100	Joseph Dutrisae	11 82
102	J. Ducharme	20 30
103	E. Denomme	7 24
104	V. Denomme	10 61
105	E. P. Denomme	44 24
106	Jules Ethier	36 36
107	Osais Ethier	31 97
108	Damas Ethier	24 83
109	Jeremie Ethier	60 55
114	Pierre Fortin	23 35
120	Donat Filiatrault	31 45
123	Joseph Gelinas	67 57
125	Anselme Gelinas	27 76
127	Adam Graham	27 35
129	Robert Graham	13 27
131	Johnny Guenette	25 23
133	C. G. Guenette	52 51
134	Joseph Gagnon, balance	14 94
135	Antoine Gagnon	53 62
137	Triffle Gagnon	45 04
139	Isidore Gagnon	25 10
143	Napoleon Gervais	8 80
145	Vilmer Genest	21 93
146	A. B. Girard	99 33
147	J. Girard	9 38
151	Joseph Giroux	42 78
156	U. Godin	29 50
158	Philibert Gingras	30 00
159	Jeremie Herard	36 98
160	Albert Howard	21 84
163	Joseph Hervieux	33 56
165	Mathais Joly	23 43
168	Maxime Joly	19 54
169	Octave Jolbert	63 93
170	Octavien Jolbert	19 07
	Octavien Jolbert	28 83
172	Norbert Legault	43 49

Collector's Roll No.	Name.	Amount.
177	Omer Legault	23 07
179	N. Legault	54 96
181	W. Levac	7 54
182	Ovila Levac	20 80
183	George Levac	29 20
185	Alfred Limoge	60 20
187	Simeon Leduc	6 01
188	Xavier Larocque	6 01
190	James Lauden	58 64
192	Cyprien Lefebvre	27 73
193	Alexis Lefebvre	30 57
194	James Leach, balance	36 00
195	Steven Lecompte	61 90
196	Ebzeard Lebeau	27 46
200	Israel Lepage	63 93
204	Adelard Lemire	14 64
205	Severin Lawrance	67 66
207	John Larocque	8 47
208	Adelard Lambert	16 92
209	Alphonse Legendre	15 00
210	Azari Landry	6 31
215	Louis Leclair	16 77
216	Zeogene Legault	2 98
217	Xavier Lachance	16 92
225	Joseph Miron	29 99
226	Ovide Miron	6 76
229	Ferdinand McMurray	6 62
232	T. Marleau	2 60
235	John Millard	38 43
236	Michael Milroy	24 13
237	Pierre Nadeau	59 83
238	Pat O'Brien	11 69
240	Cyprien Pilon	12 56
245	Eugene Perrault	8 15
247	Charles Perrault	18 47
248	L. Poirier	6 31
249	Joseph Poirier	15 00
250	Omer Poitras	16 40
251	Conrad Poitras	25 23
252	Joseph Poitras	9 08
253	Arthur Picher	49 75
257	Hermidas Provencher	2 32
259	Francis Paquette	25 23
260	Leon Pellevin	6 01
264	Arsene Rainville	6 60
268	Onesime Riberdy	33 31
269	Zenon Riberdy	17 00
270	A. Remillard	51 63
273	Onesime Remillard, balance	9 84
276	Ernest Rehault	9 00
277	Alfred Rhault, balance	24 56
278	Albert Robert	31 18
279	J. O. Robert	47 53
280	Ovila Robert	22 32
281	Alfred Robert	47 82
284	Gilbert Robert	21 64
285	Edmond Roberge	69 30
286	Damace Roberge	12 32
287	Joseph Roberge	30 48
288	Henry Rhault	18 72
290	Louis Remillard	34 06
295	Francis St. Amour	117 25
297	E. St. Amour	28 31
300	August Savignac	30 00
301	Arsene Savignac	35 97
302	Roderick Steep	27 72

Collector's Roll No.	Name.	Amount.	
303	M. J. Steep	26 54	
304	Michael Steep	4 00	
304	Michael Steep	38 44	
307	Zenon Sabowiin	3 91	
309	Luc. Sabowiin	72 81	
312	Joseph St. George	63 29	
313	N. St. Amour	34 52	
316	Charles Trudel	36 36	
319	Ephreme Turenne	16 47	
325	Joseph Venne	17 88	
326	Arthur Venne	13 28	
329	James Walker	29 76	
330	John Walker	24 93	
Non-resident.			
332	Ed. Beaudoin, Sturgeon Falls	14 07	
333	Hilaire Chretien, Desaunier	17 53	
334	Joseph Coutu, Notre Dame du Luc, Ont.	6 60	
336	Albert Delcourt, Cobalt	4 00	
337	Mrs. E. Damboise, Sturgeon Falls, Ont.	6 62	
385	Damas Deslongchamps, Sudbury	35 46	
339	Napoleon Dubeau, Providence	18 76	
343	Imperial Lumber Co., Toronto	35 75	
345	B. B. Kvikup, Sturgeon Falls	13 27	
347	Adelard Lachance, Iroquois Falls	24 62	
348	Joseph Lacowisciere, Sturgeon Falls	27 54	
349	J. B. Leblanc, Sudbury	32 06	
351	Alfred Lapointe, Verner	5 88	
352	Hector Lapointe	5 85	
353	Z. Lefebvre, Chelmsford	22 82	
355	Annie Legault, Cadarette	3 19	
356	Michaud & Levesque, Sturgeon Falls	3 23	
358	Joseph Menard, Cache Bay	28 99	
359	Henry Menard, Sudbury	3 85	
360	Gadfoid Natte, Rapid L'Orignal, Que.	6 31	
363	Jules Phillipe, Boninville, Que.	3 31	
364	Moise Phillips	4 11	
366	Onesine Perrault, Copper Cliff	19 99	
367	A. H. Payette, Providence	21 54	
372	Isai Senecal, Sturgeon Falls	8 80	
373	Jules Sinobi, Verner	19 72	
			$393 87
	Gross total		$4,655 70

SUMMARY.

Collector's Rolls.

	1915	1914	1913	1912	1911
War Tax	$537 60				
Township Rate—General..	1,611 96	$2,596 87	$2,541 76	$2,414 86	$2,471 86
Debentures—					
Public School No. 2....	136 36	133 38	144 85	127 75	
" " " 3....	142 13	136 08	141 92	136 59	
" " " 5....	96 16	96 39	95 91	100 05	
Statute labor	1,227 00	1,082 00	842 00	832 00	787 90
General School Rates ...	1,089 47	1,166 69	1,069 93	1,118 40	1,104 75
Public School No. 1.....	1,243 78	1,675 18	1,351 80	705 84	684 33
" " " 2.....	203 17	336 79	355 92	171 12	132 37
" " " 3.....	355 35	333 62	433 92	282 58	188 31
" " " 4	236 28	252 64	252 42	177 36	291 79
" " " 5.....	169 62	127 72	208 67	36 62	205 44
Separate School No. 2....	411 75	447 50	404 53	357 10	385 32
Sabourin award	24 74				
St. Amour award	49 01				
Engineers' fees		25 80	8 08	58 87	
Separate School No. 1 ...			100 67		
Debentures, Public Schools					389 58
Ditches.....					50 30
Totals.....	$7,534 38	$8,410 66	$7,952 38	$6,519 14	$6,691 95

Assessment as shown on Assessor's Roll.

	1915.	1914.	1913.	1912.	1911.
Resident	$490,615 00	$479,038 00	$487,129 50	$454,907 50	$457,905 00
Non-resident	46,399 00	39,065 00	21,670 00	29,415 00	36,260 00
Totals.....	$537,014 00	$518,103 00	$508,799 50	$484,322 50	$494,165 00

Assessment as shown on Collector's Roll.

	1915.	1914.	1913.	1912.	1911.
Resident	$490,790 00	$480,216 00	$486,429 50	$453,512 50	$457,867 00
Non-resident	46,399 00	39,065 00	21,670 00	29,215 00	36,260 00
Totals.....	$537,189 00	$519,281 00	$508,099 50	$482,727 50	$494,127 00

INSURANCE.

No.	Company.	Sum Insured.	Premium.	Date.	Expires.	Subjects Covered.	
7,203,017	Commercial Assurance Co., Ltd., London, Eng.	$800 00		Feb. 11, 1910	Feb. 11, 1913	$700 00 on Building of School No. 1.	N.B. — Policy expired about three years ago, and not renewed. Secretary written. See report.
						100 00 on Contents of School No. 1.	
153,148	Mount Royal Assurance Co., Montreal	500 00		Jan. 9, 1915	Jan. 9, 1918	450 00 on Building of Separate School No. 2.	
						50 00 on Contents of Separate School No. 2.	
8,383	Algoma Mutual Fire Insurance Co.	1,000 00	$30 00	Jan. 16, 1915	Jan. 11, 1918	450 00 on Building of School No. 2.	
						150 00 on Contents of School No. 2.	
8,228	Algoma Mutual Fire Insurance Co.	1,000 00	30 00	Aug. 12, 1914	Aug. 3, 1917	1,000 00 on Building of School No. 3.	
7,552	Algoma Mutual Fire Insurance Co.	400 00	12 00	Oct. 4, 1912	Aug. 22, 1915	350 00 on Building of School No. 4.	N.B.—This Policy expired on 22nd August, 1915, and had not been renewed. Secretary written to bring matter before Trustees forthwith.
						50 00 on Contents of School No. 4.	
01,836,545	Union Assurance Soc'y, Ltd.	450 00	7 65	Sept. 28, 1913	Sept. 28, 1916	375 00 on Building of School No. 5.	
						75 00 on Contents of School No. 5.	

123 Bay Street, Toronto, Ont., 11th March, 1916.

To the Reeve and Council, Township of Bucke, Ontario:

Gentlemen,—Acting under instructions from the Provincial Municipal Auditor, J. W. Sharpe, K.C., confirmed by an Order-in-Council under date of December 31st, 1915, an inspection, audit, or examination of the books, vouchers and moneys of the Municipality of the Township of Bucke, was made for the complete year 1915.

The school tax statements cover from the years 1912 to 1915, and examination was made of the collector's rolls for the years 1910 and 1911.

Investigation was granted upon a petition signed by numerous ratepayers.

TOWNSHIP OF BUCKE.

Petition.

The petition of the undersigned duly qualified ratepayers of the Township of Bucke, in the District of Timiskaming.

That at a public meeting of the ratepayers of the said township, held in the Northland Hall, North Cobalt, on Friday evening, November 26, 1915; after considerable discussion it was moved and carried that in the opinion of the meeting there should be a Provincial Municipal Audit of the books of the township, and that such audit should take place at the beginning of the year 1916.

That owing to the unsatisfactory manner in which the books of the township have been kept there now appears to be a discrepancy of some twelve hundred dollars between the books of the township and the accounts of the Public School Board. No separate account of the moneys collected for the various Public and Separate School Sections has been kept in the township books, and no separate account of the general school tax has been kept.

In short the books are in such a deplorable condition that your petitioners feel that it would be impossible for a new township clerk to take them over and do justice to himself and the township.

Your petitioners therefore pray that a Provincial Municipal Auditor, preferably a stranger to all parties in the township, be sent up from Toronto, to audit the books of the township, and put them in a good working condition.

And as in duty bound your petitioners will ever pray, etc.

Cash Abstract.

Cash statements for the year 1915, both in abstract and detailed form are attached hereto.

The yearly statements to be prepared by the treasurer under the following section of the Municipal Act have not been compiled for the past several years. In future it will be necessary for the treasurer to comply with the Act and give the details as well as the abstract figures.

"The council of every town, village and township shall hold a meeting on the 15th day of December in each year, and shall immediately thereafter publish a detailed statement of the receipts and expenditures of the corporation for the portion of the year ended on that day, together with a statement of assets, liabilities and uncollected taxes, and a similar statement respecting the last fifteen days of the next preceding year.

The statement shall be signed by the head of the council and by the treasurer, and shall be published.

Instead of publishing the statements the council may cause them to be posted up, not later than the 24th day of December, in the office of the clerk and of the treasurer, at all post offices, and at not less than twelve other conspicuous places in the municipality.

The clerk shall procure to be printed not less than one hundred copies of the statements, and shall deliver or transmit by post one of them to every elector who requests him to do so, not later than the 24th day of December in each year, and shall also see that copies of the statements are produced at the nomination meeting." Chap. 192, sec. 237, R.S.O.

Balance Sheet.

Balance sheet at 31st December, 1915, exhibits current assets of some $24,000 as against current liabilities of some $17,000, making a surplus of current assets of $7,000.

Uncollected taxes appears on the balance sheet at over $20,000, and a great portion of these taxes are against non-resident lands, and it is doubtful whether a large part will only be collected by recourse to tax sale. Ratepayers' surplus in schools and public parks is $11,000, but this amount represents a fixed investment.

Debentures.

The three issues are shown on the report to the Bureau of Industries, copy of which is attached.

Two issues are for school buildings, and one for local improvements and construction of sidewalks.

Debenture register in the treasurer's care was written up to date and in order.

Insurance and Bonds.

There is no insurance carried. A small hall in North Cobalt containing the lock-up is not covered by insurance.

Treasurer's bond number 701813 London Guarantee and Accident Co. for $500 covers William Herbert Gates. Premium is $5, and renewal receipt number 97004 expires the 1st of February, 1916. The bond is in the clerk's care and does not appear to be for a sufficient amount.

Collector's bond number 75897 London and Lancaster Guarantee and Accident Co. for $1,000 covers George Lewis Chabot. Premium is $7.50, and the policy expires September 15, 1916. The insured amount does not appear to be large enough. The policy was in the collector's care, but was handed to the clerk for safe keeping.

TOWNSHIP OF BUCKE.

Treasurer.

Mr. G. H. Gates has acted in the capacity of treasurer for the past several years and now receives $100.00 per annum for his services.

Municipal Cash Book in the authorized form is neatly kept and balanced off.

Rough memorandum book has taken the place of the Township ledger, but the figures contained therein were not complete.

Ledger should be obtained and school, debenture, collector's and other accounts clearly kept.

The petition claims that the books are in a deplorable condition, but as far as the Cash Book and the vouchers connected therewith, this statement can certainly not apply. All cheques, warrants and invoices for the year 1915 were seen and were in proper order.

Pay warrants are made out by the Clerk and signed by him and the Reeve, and are thereupon handed to the Treasurer for payment. The Treasurer issues a cheque to cover such warrants on the municipal bank account, but cheques only bear his signature, and in fact is similar to a personal account. The matter was discussed with the Reeve, and in future cheques will be issued bearing the signature of the Clerk and Reeve and handed to the Treasurer who will countersign them before payment is made.

Township Clerk.

Mr. Herbert A. Day has been township clerk since March of 1912 when he took over the duties from Mr. McQuarrie.

In the petition the following paragraph is contained:

"In short, the books are in such a deplorable condition that your petitioners feel that it would be impossible for a new township clerk to take them over and do justice to himself and the Township."

Those of the petitioners seen stated that the condition of the books referred to the Clerk's work entirely and not the Treasurer's. It must be remembered that the Clerk has charge only of the Minute Book, By-law Book, and prepares the Collector's roll. In regard to the Minute Book and By-law Book these appear to be in good order and there is very little to complain of in this matter.

In regard to the Collector's Roll the alphabetical arrangement is not the best form. There is a certain amount of laxity shown in handling the Collector's Roll as will be seen from the list of errors and omissions in the preparation of the 1915 roll.

However, the rolls of recent years could not in any case be called deplorable, but that term may be applied to the rolls for the years 1910 and 1911, which are in bad shape, due to the bad collectors and carelessness on the part of the late treasurer.

It appears possible that a new clerk could take hold at any time with very little trouble.

No doubt laxity has been shown by most of the officials, due mostly to lack of system, which should now be remedied.

Assessment Rolls.

Subject to the provisions of sections 56 to 60 of the Assessment Act every assessor shall begin to make his roll in each year not later than the 15th day of February, and shall complete the same on or before the 30th day of April, and shall attach thereto his affidavit or affirmation according to form seven of the Assessment Act, which may be made before the Clerk of the municipality or a justice of the peace, having jurisdiction therein or a commissioner for taking affidavits, or a notary public, and shall deliver such roll, completed and added up with affidavit attached, on or before the 30th of April. R.S.O. 1914, Chap. 195, Sec. 50.

No affidavit or affirmation was seen attached to the rolls for the years 1910, 1911, 1912, 1913 and 1914. In the case of the year 1915 it was attached.

Assessment Roll for the year 1915 was checked item by item into the Collector's Roll for the same year.

It was observed that the following assessments were omitted from the Collector's Roll:

184	Hubert, Mrs. L., 123-125 Queen (Sep. S. 4)	$150 00	$7 78
1211	Legault, Adolph, part N. ½ of 12 (Sep. S. 4) (Assessment $500.00 entered as $50.00.)	450 00	21 82
1267	Moore, Arthur A., S.E. ¼ of S. ½ 6 (Pub. S. 3)	300 00	5 55
1271	Non-resident, N.W. ¼ of S. ½ 6 (Pub. S. 3)	250 00	4 62
			$39 77

Alterations in the Assessment Roll for the year 1915 were checked with the minutes of the Court of Revision and found correct.

Tax Rates.

Tax rates for the years 1911 to 1915 have been contrasted and the various rates appear on a statement attached hereto.

While the general rate has been maintained at the same number of mills school rates have increased considerably, so that the increased taxation is occasioned by school rates.

Collector's Rolls 1914 and 1915.

Collector's Roll summary for the year 1915 is exhibited in detail and this form should be adhered to.

Errors in the extensions in the Collector's Roll for 1915 are as follows:

Philbin, Jas., 3 Con., Lot 508	$4 50
Johnson, Alex., 3 Con., Pt. N. ½ of 10	6 00
Plouffe, Omar, Arg	1 00
Darke, J. C., North Cobalt	18 25
	$29 75

The Collector should see that all these amounts are collected.

In checking the arrears from the 1914 roll to the 1915 one it was discovered that the following items were not carried forward:

Ira Church, 92 Station	$18 19
Mrs. P. T. Gannon, 110-112 Queen	2 89
Latham, Thos., 153 Station	8 64
	$29 72

By-laws 185 and 194, passed in 1914 and 1915, provided that "Taxes paid on or before the 16th day of October a discount of 5 per cent. will be allowed, and a penalty imposed of 5 per cent. on taxes paid after the 16th of November."

It is very evident that the discount is allowed after the authorized date, and in hardly any case does the interest appear to have been charged in the past. The by-laws are of no use if violated in this way.

The 1915 Collector's remuneration is stated at 3 per cent. up to $9,000.00 of collections and 6 per cent. in excess thereof. It will be observed that in the tax collector's cash reconciliation at the 31st December, 1915, there is cash undeposited to the amount of $230.70. This represents his commission on the collections. It would be better, however, for him to deposit all collections intact into the bank and request the council to issue him cheques on account. The transations will then appear in their right form in the cash book.

Certain taxes that were unpaid in 1914 and not carried forward for various reasons, which are given on an attached statement, and amount to $167.74 are to be dealt with by the Council. They should be scrutinized and when written off should be entered in the Minute Book in the form of a resolution.

Duplicate assessments on folio 57, amounting to $402.38, are also to be treated similarly.

Tax account reconciliation of the 1914 roll is attached also tax reconciliation of the 1915 roll to 31st December, 1915.

Tax Collector, 1910.

Settlement of No. 2 Roll.

T. W. Fleming acted as one of the collectors in the year 1910 and his settlement appearing in the back of the roll is shown hereunder. Actual reconciliation of the roll is also shown and it is apparent that he accounted for all his collections.

SETTLEMENT OF T. W. FLEMING, TAX COLLECTOR, 1910, No. 2 ROLL.

Appearing in Back of Roll.

To Total taxes on Roll	$1,749 20	
" Payments to Treasurer	.....	$1,242 24
By Arrears	.....	506 96
	$1,749 20	$1,749 20

Actual Reconciliation of Roll.

To Total taxes on Roll	$1,828 52	
By Payments to Treasurer	.....	$1,241 59
" Arrears per list in back of Roll	.....	608 28
To Items in No. 2 Roll collected by Fleming and not marked on his Roll:		
John Burns	$4 00	
David Berry	13 00	
" Difference in Settlement	4 35	
	$1,849 87	$1,849 87

Tax Collectors, 1910.

Settlement of No. 1 Roll.

Mark Webb was the other collector in the year 1910, and it is evident from the statement appearing hereunder that there is a shortage of $147.36 in his accounting. It is stated that the collector went west and after writing to him about the shortage he forwarded $25.00, which appears to his credit on the statement. Since July 4, 1912, the Township have not been able to get in communication with him.

In addition to the above mentioned shortage there are taxes amounting to $64.89 which he had not marked paid in the roll and the collector for 1912 saw Webb's receipts for these amounts. However, the council have dealt with these by writing them off. The resolution being contained in the Minutes of April 25, 1913.

SETTLEMENT OF MARK WEBB, TAX COLLECTOR.

1910, No. 1 Roll.

To Cash collected, per markings on Roll	$6,139 30	
By Cash paid McDougall and marked on Roll	.....	$196 35
" Cash paid to Fleming and marked on Roll	.....	43 00
" Cash paid Treasurer, etc., and marked on Roll	.....	86 00
" Cash paid over to Township Treasurer by Collector	.....	5,666 09
" Collector's shortage	.....	147 86
	$6,139 30	$6,139 30
To Collectors' shortage	$147 86	
" M. George, No. 5, not marked paid	24 50	
By Cash paid by Mark Webb, July 4, 1912	.....	$25 00
" Balance due by Mark Webb and not dealt with by Council	.....	147 36
	$172 36	$172 36

To Tax Arrears, 1910, carried forward to 1912 Roll and marked by the Collector for 1912 as paid previously, he having seen receipts for same:

Page 5 Buckwell, J. (could not trace back)	$18 02
" 17 Gemas, Desire	5 44
" 22 Jean, Mrs. Jos.	13 00
" 38 Parent, Felix (could not trace back)	12 10
" 41 Robins, C. D. (could not trace back)	16 33
	$64 89

The above were written off by Council April 25, 1913.

Tax Collector, 1911—Settlement.

T. H. Thompson was the tax collector for the year 1911; his settlement is shown hereunder and he appears to have accounted for all collections.

Cash marked paid, apparently in the Clerk's handwriting, amounting to $610.92 does not all appear to be accounted for, and there is a balance of $140.70 to be explained.

Markings on the roll are so imperfect and entries into the Cash Book containing practically no detail, it is almost impossible to state who is responsible for the shortage. However, the Clerk may be able to explain the situation as all items marked by him are contained on the attached list.

STATEMENT OF T. H. THOMPSON, TAX COLLECTOR, 1911.

To Cash marked collected on Roll	$6,740 11	
By Cash marked paid to Clerk	.....	$610 92
" Cash marked paid to Treasurer	.....	20 20
To Cash collected and not marked paid on Roll, per list	130 67	
By Cash paid over to Treasurer	.....	5,669 17
" " " schools direct	.....	300 00
" Salary cheque held and applied on taxes	.....	102 63
" " " " "	.....	84 76
" Balance of salary held	.....	90 21
To Difference	7 11	
	$6,877 89	$6,877 89

To Tax Arrears, 1911, carried forward to 1912 Roll and marked by the Collector for 1912 as paid previously, he having seen receipts for same:

Page 1	Andrews, John	$0 50
	Andrews, Alex.	7 00
" 3	Brooks, Louis	4 50
" 4	Banwell, E.	20 25
" 11	Dayment, Wm.	6 50
" 17	Groves, Dr. A.	11 38
" 18	Gagnon, I.	12 00
" 19	Huard, Paul	40
" 23	Johnston, L. C.	4 50
	Jenkins, Thos.	9 20
" 27	Lapoint, A.	9 50
" 32	Meredith, G. H.	6 38
" 34	Murray, Jas.	21 06
" 38	Patrie, Edmund	4 50
" 48	Wolst, J. W.	13 00
		$130 67

H. A. Day, Clerk, Settlement.

To Markings on Roll in Clerk's handwriting	$610 92	
By Payments to Town Treasurer:		
July 4th, 1912....C.B. 49	.....	$107 50
Oct. 1st, 1912.... " 51	.....	53 00
Nov. 16th, 1912.... " 52	.....	250 00
Mar. 27th, 1913.... " 56	.....	59 72
" Balance to be accounted for	.....	140 70
	$610 92	$610 92

H. A. Day's Markings on 1911 Collector's Roll.

Roll No.	Page No.	Amount.
836	2	*$53 09
597	3	19 00
224	4	4 50
166	4	7 00
911	6	*25 00
707	6	*4 50
657	7	14 05
848	7	17 40
342	10	6 00
250	10	14 00
888	11	3 87
937	11	25 00
352	13	21 50
463	14	11 40
555	14	21 50
747	16	14 00

Roll No.	Page No.	Amount.
940	16	13 00
856	16	*4 50
223	17	*20 20
225	17	*13 00
269	17	4 50
606	18	9 00
810	20	55 00
885	20	8 00
395	20	14 00
226	21	9 50
563	23	8 00
260	23	28 21
576	26	8 27
502	27	7 00
728	29	*7 00
1056	30	*22 75
75	34	4 30
192	34	4 50
461	35	10 50
889	35	3 87
220	36	13 00
495	37	10 00
458	37	10 00
444	37	8 00
648	37	10 00
1008	40	$6 60
345	42	4 50
674		7 60
99		25 00
		$610 92

Collector's Roll.

There are no duties devolving upon the municipal official more important in results than those of the collector of taxes, yet they are often misunderstood, often neglected, and seldom receive effective supervision. Diligent collection and prompt return of taxes are important, clear and accurate accounts of moneys received and returned are equally important. A system of bookkeeping which may be simple, and at the same time methodical and reliable, is a protection to the collector against unjust suspicion and possible financial loss. From "Suggestions touching the Duties of Auditors."

The Clerk shall attach to the roll a certificate signed by him according to the following form:

"I do certify that the within roll is the Collector's Roll prepared according to the provisions of the Assessment Act for the Township of Bucke for the year," and shall deliver the roll so certified to the Collector on or before 1st October or such other date as may be prescribed by by-law of the municipality.

When the roll has been handed to the Collector an account should be opened by the Treasurer in his ledger charging the Collector with the total amount of taxes levied upon his roll.

The Collector is required to pay over to the Treasurer his collections every two weeks.

At or before the return of his roll every Collector shall make oath in writing that the date of every demand of payment or notice of taxes required by sections

*These items are marked paid, apparently in the Clerk's handwriting, but are not marked with his name.

107 or 108, and every transmission of statement and demand of taxes required by section entered by him in the roll has been truly stated therein. Every such oath may be according to Form 10, and shall be written on or attached to the roll and may be taken before the Treasurer or before any of the persons mentioned in Section 228. R.S.O. 1914, chap. 1915, Sec. 116.

If any of the taxes mentioned in the Collector's Roll remain unpaid and the Collector is not able to collect the same, he shall deliver to the Treasurer of his municipality an account of all taxes remaining unpaid, and in such account shall show opposite to each assessment the reason why he could not collect the same by inserting in each case the words "Non-resident" or "Not sufficient property to distrain," or "Instructed by council to return not collected," or as the case may be. He shall at the same time furnish the Clerk of the municipality with a duplicate of such account and the Clerk (in cities "the Treasurer") upon receiving the same shall mail a notice to each person appearing on the roll with respect to whose land any taxes appear to be in arrear for that year. R.S.O. 1914, chap. 195, sec. 119. Faithful observance of the provisions of this section would ensure prompt discovery of any errors made in the Collector's returns. It appears, however, in many cases to have been ignored and it is surprising that it should be so. If the Collector should omit to give credit on the roll for any payment to him, the account to the Clerk and the notice by him to each ratepayer appearing to be in arrear would at once lead to the detection of such omission. Auditors should check the account sent to the Clerk with the Collector's Roll and if they find that the provisions of this section have not been observed they should make to the council a special report of the facts.

Upon making oath before the Treasurer that the sums mentioned in such account remain unpaid, and that he has not, upon diligent inquiry, been able to discover sufficient goods or chattels subject to distress under section 109 whereon he could levy the same or any part thereof, the Collector shall be credited with the amount not realized.

The condition of the 1910 to 1915 rolls in regards to the Clerk's certificate and Collector's oath is as follows:

Year.	Roll.	Clerk's Certificate.	Collector's Oath.
1910.....	No. 1	not in roll	not in roll
1910.....	No. 2	not in roll	in roll
1911.....		not in roll	not in roll
1912.....		in roll	not in roll
1913.....		in roll	not in roll
1914.....		in roll	not in roll
1915.....		in roll	not returned

In respect to the notices to be mailed to each person appearing on the roll with respect to whose land any taxes appear to be in arrears for that year. This was stated to be done for the first time on the return of the 1914 roll.

Schools.

School trustees are required, "To submit to the Municipal Council, on or before the 1st day of August, or at such time as may be required by the Council, an estimate for the current year of the expenses of the schools under their charge." (Sec. 73, Public School Act.)

"Current year" is understood as the calendar year then current, not the year ending the 1st day of August. School trustees will accordingly be guided by the

above section as the school supporters are not desirous of paying taxes in one year for the support of the schools in the forthcoming year.

Council shall levy and collect upon the taxable property of the school supporters of the municipality such sums as may be required by the School Board and embodied in their estimates.

Payments to the schools are to be made from time to time as requisitioned for, and in the case of any deficiency arising from the non-payment of taxes by school supporters the deficiency shall be paid out of the general funds of the municipality for the time being.

Council is not responsible for uncollectable taxes to the School Board. These are mainly comprised of business and income, as in the case of property the Council are able to distrain.

Collections made from school supporters if in excess of the amount asked for in the school estimates are to be paid over to the School Board, who will accordingly take into account such moneys so paid over in their next year's estimates.

Council when unable to collect from school supporters a sum sufficient to satisfy the estimates, will add such amount uncollected to the estimates rendered to them by the School Board the succeeding year, so as to reimburse the general funds for the advance payments made.

While the municipality is indirectly responsible to the schools for the amount of the estimates they are only indebted for the amount of the levies made, and for the purpose of exhibiting their liability to the schools statements showing the township's settlements with the Public and Separate Schools have been compiled, the levies being taken as amounts to be accounted for.

On the statements the estimates have been compared with the actual levies that appear in the Collector's Rolls for the various years.

No account has been kept from year to year by the town to show what amount of the levies have been collected, and as it is liable to the schools for the full amount of the levies these have been credited from the rolls. It has been the custom to levy for an amount slightly more than what was required or requisitioned for by the schools, so that the amount credited to the schools is somewhat larger than the requistions for the period called for.

The petition contains the following paragraph.

"That owing to the unsatisfactory manner in which the books of the Township have been kept there now appears to be a discrepancy of some twelve hundred dollars between the books of the Township and the accounts of the Public School Board. No separate account of the moneys collected for the various Public and Separate School Sections has been kept in the Township books and no separate account of the general school tax has been kept."

This is true in as far that no separation has been made prior to the 1915 taxes of the cash collections. In the year 1915, however, the collector has kept tax collections separated under the several headings.

In regard to the statement that there is a difference of twelve hundred dollars between the school and the Township books, this is not strictly correct. The matter originated in the Council receiving a letter from the Secretary of the Public School Section No. 4, drawing their attention to the Public School Act, sec. 47, para. 2 and 3, which states:

"Every Municipal Council shall annually account for all moneys collected for Public School purposes, and pay over the same to the School Board of the municipality or of the section.

"Where the Municipal Council collects from the Public School supporters of any municipality or of a school section any sum in excess of the sum disbursed on account of the Public School or schools within such municipality or section, such excess shall be credited to and paid over to the board on whose account it has been collected."

The Secretary requested for an accounting for the years 1912, 1913 and 1914.

It appears that the Township Clerk went through the Collector's Rolls for the years 1912 and 1913 and drew off a list of the cash collected on account of No. 4 Public School. At that time the 1914 roll was in the hands of the Collector and he was unable to get it. The total of the cash collections of the years 1912 and 1913 when contrasted with the sums paid over to the school by the Township in the years 1912, 1913 and 1914 was some $1,200.00 short. That in the school cash book showed that they had received $1,200.00 more than the amount exhibited on the Clerk's statement.

It must be remembered, however, that the Clerk's figures only covered the years 1912 and 1913, but it was this that gave rise to the foregoing statement that there was a difference between the books. The matter was explained to the school secretary and he understood the situation.

Statements have been prepared with the four schools and embody the transactions from the 1st of January, 1912 to 31st December, 1915.

Balance due the school trustees at the 31st December, 1915, has been based on the actual levies made and not on the estimates, although the estimates have been included in the statements for contrast.

There has been a number of taxes written off in the past few years for various reasons, and in the case of duplicate assessments and other items of this nature, where the non-collection is not the fault of the Township, the items are chargeable back to the schools.

Special notice should be taken of the amount due No. 4 Public School. It is nearly $6,000.00 and their estimates for the year 1915 were only $3,800.00.

BANK CERTIFICATE.

Union Bank of Canada.

Haileybury, Ont., Jan. 22, 1916.

We beg to advise you that the balance at the credit of the Municipality of the Township of Bucke at this office on the 31st of December, 1915, was three thousand nine hundred and thirty-one dollars and fifty-five cents ($3.931.55), at which date the Township was indebted to this bank to the extent of $6,500.00 by way of promissory note due on the 3rd of January, 1916.

Yours truly,

(Signed) G. BAGSHAW,

Manager.

BANK RECONCILIATION AT 31ST DECEMBER, 1915.

Bank Balance, per Cash Book Fo. 85			$3,746 64
Outstanding Cheques—No. 891	$8 00		
902	2 00		
913	13 05		
917	139 86		
918	4 00		
			166 91
Bank Balance, per Pass Book		$3,931 55	
		$3,931 55	$3,931 55

SYSTEM.

Assessment and Collectors' Rolls.

Registered plans should be obtained for the use of the assessor and the entries on the Assessment Rolls should follow such plans, the lots being arranged in numerical order under the particular street or concession without regards to their owners. It is necessary, of course, that the owner's name shall appear against all lots. It is only by this method that all lots can be traced into the Assessment Roll and duplicate assessments avoided.

Collector's Rolls are not arranged in a manner best suited to facilitate clerical work. While the Assessment Rolls are arranged in street or concession and lot order, the Collector's Rolls are entered up in alphabetical order, which renders it very difficult to check or trace items from the Assessment to the Collector's Rolls.

The Collector's Rolls should be a copy of the Assessment Roll page for page, and the Clerk in its preparation could check and see if any lots had been omitted.

Tax arrears register should also have the lots arranged in the same manner so that it woud be an easy matter to enter the arrears of taxes in the register.

This can readily be seen when it is taken into account the constant change of property owners, thus a lot may be owned by Adams and at present it would be entered in the front part of the roll, next year it may be owned by Williams and its place would be at the end of the roll. Cross indexing would make it possible to trace the arrears from year to year, but as no indexes exist it was necessary to make a perusal of the whole roll to trace some of the arrears from one roll to another.

The arrangement of the rolls was discussed with the Reeve and Clerk and they stated that immediate action would be taken in the matter.

Treasurer's Official Receipt.

There is no regular form of receipt in use and the one now submitted should be printed and used by the Treasurer for all moneys he receives. The receipt will be in duplicate, numbered consecutively and he must account for all numbers.

Tax Collector's Receipt.

There is none now in use and the roll only bears the marking in reference to the payment. Form as submitted herewith should be printed in duplicate and numbered consecutively, and no moneys should be received by the Collector without the issue of one of these receipts. The duplicate will be retained for audit and other purposes.

Tax Collector's Receipt Summary.

This form is for the entering up of all cash received as shown on the duplicate receipt. It will contain receipt number, date of payment, discount allowed or interest imposed, and the receipts are divided as to current taxes or arrears. The date and amount of the deposits will be entered in the bank deposits column.

Tax Collector's Roll.

Stock book ruling of this roll is not well arranged as far as the provision for showing cash received, date of payment, etc., is concerned. The only way to overcome the difficulty in connection with the Collector's Roll is to have one specially printed.

Form submitted herewith is an extension of the stock ruling. Columns are provided thereon to show the cash received by the collector, the date of receipt, and discount allowed.

Other columns are provided for the treasurer to show the cash received by him, the date of receipt, and interest added. A final column is for the arrears to be entered that are carried forward to the next year.

Cheques and Warrants.

As stated previously it is unnecessary to use payment warrants as the cheque bearing the signatures of the Reeve and Clerk and countersigned by the Treasurer are quite sufficient.

Records.

None of the Township books appear to be kept in a safe or vault, and such records are liable to be destroyed by fire.

In the case of the Tax and Assessment Rolls, Minute and By-law Books, and other records in the Clerk's care, these are in a building where there is a vault and it would be to the ratepayers interest if some arrangement was made for depositing these records therein.

Public School.

Cash book used by No. 4 Public School is a small blank book, and the authorized form should be procured and put into use.

SYSTEM.

TOWNSHIP OF BUCKE.

Treasurer's Official Receipt, No. .....

$.....100. Date .....of ..... 191....

Received from .....

the sum of .....100 dollars

being for .....

.....

Cash book folio .....

.....

Treasurer.

SYSTEM.

TAX RECEIPT

No. .....

TOWNSHIP OF BUCKE.

Date .....191...

Received from .....

the sum of ..... 100 dollars

Roll No.	Lot No.	Block	Plan	Street or Avenue	Years	Amount	
					Discount		
					Interest		
					TOTAL		

.....
Collector.

SYSTEM.

TAX COLLECTOR'S RECEIPT SUMMARY

TOWNSHIP OF BUCKE.

Year 19.....

Receipt No.	Date	Discount Allowed	CASH RECEIVED			BANK DEPOSITS	
			Interest	Current Taxes	Arrears	Date	Amount

TAX ROLL

TOWNSHIP OF BUCKE.

Total Taxes	Paid to Collector		Discount Allowed	Paid to Treasurer		Interest Added	Arrears Forward
	Date	Amount		Date	Amount		

Conclusion.

Adoption of the system forms submitted herewith is essential if future complications in the collection of taxes are to be avoided.

Safe keeping of all records from destruction by fire is of the utmost importance.

Collector's and Treasurer's bonds should be attended to and the amount of indemnity increased.

Minute Book must contain full particulars against taxes written off. A general explanation is not sufficient.

Treasurer must submit detailed cash statement at the nomination meeting along with the abstract one.

Further explanation in regard to the working of any part of the bookkeeping system will be freely given.

Thanks are due to the Clerk and Treasurer for their constant attendance during the audit, and the courtesy of the Reeve and Council is duly appreciated.

The report and statements are respectfully submitted.

Henry Glover,

Auditor.

TOWNSHIP OF BUCKE.

Balance Sheet at 31st December, 1915.

Current Liabilities			$16,951 57		
Loans.					
Union Bank		$6,500 00			
Accounts Payable.					
Provincial Treasurer, war tax	$416 22				
Tax Collector, 3%, $7,928.70	237 86				
Northern Ont. Power Co.	159 20				
Local Imp. Levy, by-law 182	521 58				
		1,334 86			
Schools.					
Public No. 2	$396 58				
" 4	5,886 80				
" 5	696 35				
Separate No. 5	2,136 98				
		9,116 71			
		$16,951 57			
Deferred Liabilities			9,424 39		
Local Imp. Debentures:					
By-law No. 182		$6,500 00			
Public School No. 5 Debentures:					
By-law No. 173	$2,424 39				
By-law No. 195	500 00				
		2,924 39			
		$9,424 39			
Surplus			18,478 36		
Current assets		$7,253 50			
Deferred assets		11,224 86			
		$18,478 36			
			$44,854 32		

Current Assets			$24,205 07		
Cash.					
Union Bank, general account.	$3,764 64				
Union Bank, tax account	1 31				
G. L. Chabot, tax collector	230 70				
		$3,996 65			
Taxes.					
Uncollected, per 1915 roll	$21,801 22				
Omissions and errors, per list	99 24				
	$21,900 46				
Less lands bought by Township	1,692 04				
		20,208 42			
		$24,205 07			
Deferred Assets			20,649 25		
Sidewalks		$6,500 00			
Lands bought at tax sale		1,692 04			
Court house property		600 00			
Road machinery		350 00			
Northern Ont. Power Co. by-law 180		132 30			
School Buildings and Equipment:					
Public No. 2	$1,741 97				
" 4	3,151 94				
" 5	3,106 00				
Separate No. 5	3,370 00				
		11,374 91			
		$20,649 25			
			$44,854 32		

REPORT TO THE BUREAU OF INDUSTRIES OF THE DEBTS OF THE MUNICIPALITY OF THE TOWNSHIP OF BUCKE FOR THE YEAR ENDING DECEMBER 31ST, 1915.

Title and Description of Debts.	No. of By-law.	Original Amount of Debt.	Date when Issued or Contracted.	No. of Debts.	Amount of each Debt.	Rate of Interest.	Amount of Principal Paid in 1915.	Amount of Interest Paid in 1915.	Balance of Principal unpaid. Dec. 31, 1914.
		$ c.			$ c.		$ c.	$ c.	$ c.
Public School No. 5	173	2,500 00	1 Feb., 1914	20	200 60	5%	75 61	125 00	2,424 39
Public School No. 5	195	500 00	1 Nov., 1915	5	121 95	7%	.....	.....	500 00
Local Improvement—Sidewalks....	182	6,500 00	15 Feb., 1915	20	521 58	5%	.....	.....	6,500 00
		9,500 00					75 61		9,424 39

TOWNSHIP OF BUCKE.

Cash Abstract, for the Year 1915.

Receipts.

Taxes	$12,539 13	
Rentals	236 96	
Licenses	105 00	
Debenture sales	8,300 00	
Loans	8,500 00	
Fines	5 00	
Board of Health	114 56	
Street lighting	14 70	
Railroad tax	148 80	
Colonization Roads, grant	1,496 46	
Tax sales redemption	182 72	
Miscellaneous	29 62	
		$31,672 95
		$31,672 95

Payments.

Salaries and allowances	$1,559 56	
Printing, advertising and stationery	201 72	
Law costs	20 00	
Roads and bridges	262 72	
Colonization Roads	3,055 41	
Charity	85 50	
Debentures	1,320 56	
Loans	7,000 00	
Interest	440 30	
Schools	8,204 69	
Board of Health	450 01	
Street lighting	125 98	
Sidewalks	1,261 47	
Tax sales cost	182 05	
Tax sales redemption	61 67	
Lands bought by Township	1,809 72	
Miscellaneous	211 15	
		$26,252 51
Bank overdraft, 1st January, 1915		1,655 80
Bank balance, 31st December, 1915		3,764 64
		$31,672 95

TOWNSHIP OF BUCKE.

Detailed Statement of Cash Receipts for the Year 1915.

Taxes—		
Year 1914	$2,752 76	
Year 1915	7,690 00	
Dog taxes	157 00	
Tax sales proceeds	1,928 17	
Tax sales fees	11 20	
		$12,539 13
Rentals—		
Pole rental, Northern Ontario Power & Light Co.		236 96
Licenses—		
L. Gagnon	$5 00	
Canadian Explosives	100 00	
		105 00
Debenture Sales—		
Local Imp. By-law No. 182	$6,500 00	
Public School No. 5, By-law 173 (part)	1,300 00	
Public School No. 5 By-law 195	500 00	
		8,300 00

Loans—		
Union Bank	$6,500 00	
McQuarrie	2,000 00	
		8,500 00
Fines—		
Police magistrate		5 00
Board of Health—		
A. E. D. Bruce		114 56
Street Lighting—		
Northern Ontario Light & Power Co.		14 70
Railroad Tax Distribution—		
Provincial Treasurer		148 80
Colonization Roads—		
Provincial grant		1,496 46
Tax Sales Redemption—		
Gustave Rogge	$31 25	
Arthur Brymer	33 79	
Magloise Desjardines	117 68	
		182 72
Miscellaneous—		
Transfer from Royal Bank		29 62
		$31,672 95

TOWNSHIP OF BUCKE.

Detailed Statement of Cash Payments for the Year 1915.

Salaries and Allowances—		
H. A. Day, registration	$25 20	
G. L. Chabot, auditor	25 00	
W. M. Irving, auditor	25 00	
T. Fleming, assessor	225 00	
H. A. Day, clerk	500 00	
W. H. Gates, treasurer	100 00	
B. Normandy, tax collector	390 46	
E. A. Harper, dog tax collector	38 25	
J. Westron, reeve	47 40	
H. M. Finlay, councillor	39 20	
J. Larabie, councillor	38 40	
J. Gillies, councillor	36 20	
W. J. Adair, councillor	47 40	
Jury Selectors	6 00	
W. H. Gates, tax sales	3 00	
H. A. Day, voters' list	13 05	
		$1,559 56
Printing, Advertising and Stationery—		
Cobalt Nugget, advertising	$12 14	
Municipal World, supplies	27 55	
R. J. Lovell & Co., printing	24 58	
Haileyburian, advertising	94 55	
W. Errett, printing	7 75	
Reliable Printing Co., printing	1 29	
H. A. Day, postage, etc.	17 11	
W. H. Gates, postage, etc.	16 84	
		201 72
Law Costs—		
Slaght & Slaght		20 00
Roads and Bridges—		
A. W. Gates, roadwork	13 75	
Moise Legault, roadwork	6 50	

E. A. Harper, roadwork	22 75	
C. Hodgins, roadwork	2 50	
C. T. O. Hall, roadwork	10 00	
Bert. Gates, roadwork	2 00	
Frank Hoard, roadwork	75 00	
Philias Larder, roadwork	2 00	
Napoleon Tambean, roadwork	6 75	
Edmund Patrie, roadwork	7 00	
Geo. Hoppins, roadwork	2 50	
John Fleming, roadwork	4 00	
H. A. Day, for others, roadwork	14 50	
McCleary's, livery	2 00	
R. Little, supplies	48 39	
Geo. Taylor Hardware Co., tile	18 00	
R. J. Budd, repair grader	15 50	
Ferguson Bros., culverts	9 58	
		262 72

Colonization Roads—

Adair, W.	$137 50	
Budd, R. J.	75	
Boude, Max	4 00	
Brooks, L.	46 00	
Bourassa, A.	2 50	
Bridges, John	10 25	
Bonney, E.	3 37	
Craig, Alex.	6 75	
Craig, Albert	6 75	
Carmichael, G.	15 00	
Charbonneau, E.	34 66	
Charlebois, Ovide	8 50	
Carmichael, E.	21 00	
Carmichael, Jas.	114 28	
Colley, Tom.	20 25	
Craig, Ed.	27 74	
Craig, S.	45 16	
Craig, Wm.	53 43	
Duhamie, A.	48 97	
Danielson, A.	58 13	
England, J.	22 50	
Evans, Wm.	43 87	
Eastcott, W.	48 75	
Earle, E. F.	4 50	
Fleming, A. H.	48 12	
Filion, Geo. O.	16 87	
Fortin, J.	12 75	
Fleming, J. M.	49 75	
Fleming, T.	31 74	
Fleming, J.	2 50	
Ferguson Bros., supplies	28 17	
Greer, J. H.	3 61	
Gates, A.	52 25	
Gustofson, Otto	16 50	
Gagnon, I.	15 75	
Gustafson, Chas.	6 75	
Guy, W.	7 87	
Heard, R. R.	98 62	
Hedman, Alex.	12 25	
Herron	14 62	
Kennelly, C.	110 00	
Kirstine, F.	32 75	
Kennelly, M.	15 00	
Labine, Jos.	71 58	
Little, Roy	21 37	
Larose, M.	13 00	
Paquette, P.	4 50	
Labelle, P.	13 00	
Larabie, Philias	6 00	
Laffrenere, J.	16 50	
Lauthier, A.	66 00	

Laffrenere, I.	57 90	
Laffrenere, P.	29 75	
Larouche, S.	69 40	
Marsland, John	23 24	
Marsland, Geo.	5 62	
Middleton, Arthur	7 87	
Munro, Jas.	44 17	
Molyneau, Jas.	48 70	
Middleton, John	68 24	
Middleton, Thos.	65 12	
MacLean, J.	20 50	
Melin, A.	15 37	
McCarty, M.	10 12	
McPherson, R.	32 37	
McLean, J.	44 62	
Norfolk & Rochester	9 20	
Neilson, S.	112 75	
Neilson, O.	104 49	
Northern Can. Supply Co., supplies	13 38	
Norfolk, S.	1 95	
Owens, Albert	54 25	
Oslem, O.	62 50	
Osland, N.	93 42	
Patrie, Edmond	15 54	
Pirie, Chas.	70 10	
Plouffe, Omer	11 11	
Prevost, E.	6 75	
Rozon, J. H.	68 45	
Robinson, Reg.	26 14	
Ritchie, J. I.	6 75	
Reid, S.	22 50	
St. Cyr, A.	49 31	
Stewart, John	10 22	
Sjokvist, E.	58 50	
Sturnburg, Erastus	4 50	
Thomas, W.	46 56	
Wilson, J.	39 25	
Wabi Iron Works	3 25	
Vahey, Peter	4 12	
Zimmerman, Bert	22 50	
Zimmerman, Arthur	22 50	
		3,055 41
Charity—		
J. Fleming, *re* Hoover	$10 00	
Mrs. J. J. Jack, *re* Hoover	5 00	
Dr. Colbeck, *re* Hoover	5 00	
Providence Hospital, Elsie Brooks	40 50	
W. Munro, digging grave	5 00	
L. Steyr, livery	3 00	
Thorpe Bros., *re* Denvall	15 00	
Dagenais & Poisson	2 00	
		85 50
Debentures—		
Discount on Local Improvement By-law 182	$975 00	
Discount on No. 5 School By-law 173	145 00	
Redemption Debenture No. 1, By-law 173, principal	75 61	
Redemption Debenture No. 1, By-law 173, interest	124 95	
		1,320 56
Loans—		
Union Bank	$5,000 00	
McQuarrie	2,000 00	
		7,000 00
Interest—		
Union Bank	$384 13	
McQuarrie	56 17	
		440 30

Schools—			
No. 2 Public, 1914 Reg.	$50 00		
1915 Reg.	200 00		
1914 Grants	150 00		
1915 Grants	150 00		
		$550 00	
No. 4 Public, 1914 Reg.	$1,700 00		
1914 Grants	350 00		
1915 Grants	450 00		
		2,500 00	
No. 5 Public, 1914 Reg.	$251 00		
1915 Reg.	300 00		
Deb. By-law 173 (part)	1,155 00		
Proceeds By-law 195	500 00		
		2,206 00	
No. 4 Separate, 1914 Reg.	$1,388 69		
1915 Reg.	660 00		
1914 Grants	450 00		
1915 Grants	450 00		
		2,948 69	
			8,204 69
Board of Health—			
Strong Drug Co., supplies		$12 85	
Thorpe Bros., supplies		4 00	
Dogenais & Poisson, supplies		70	
Robt. Small		4 95	
Robt. Lillie, supplies		21 16	
John Murphy, destroying horse		3 00	
Tripps Livery		3 00	
A. Duhaime, work		16 50	
E. A. Harper, work		9 97	
R. Small, work		5 50	
Mrs. John Murphy, work		8 00	
H. Buckler, work		5 00	
E. Prevost, work		2 75	
Dr. J. A. Creasor, conventions		80 00	
Dr. J. A. Creasor, sundries		9 65	
Dr. J. A. Creasor, salary		125 00	
J. Weston, salary		8 00	
A. Geeling, salary		6 00	
H. A. Day, salary		8 00	
P. H. Jury, supplies		3 25	
Provincial Treasurer		112 73	
			450 01
Street Lighting—			
Northern Ontario Light & Power Co.			125 98
Sidewalks—			
Cain Coal Co., lumber		$974 03	
R. Lillie, nails		25 51	
Jos. Sequin, labour		71 75	
Thos. Charlebois, labour		46 05	
W. Vinkle, labour		7 80	
Philias Paquette, labour		2 40	
McCamus & McKelvie		50	
Routley & Summers		25 00	
E. Brown, labour		101 68	
E. A. Harper, labour		6 75	
			1,261 47
Tax Sales Costs—			
Haileyburian, advertising		$110 00	
Ontario Gazette, advertising		36 60	
W. H. Lewis, search		12 30	
W. H. Gates, commission		23 15	
			182 05

Tax Sale Redemption—		
Albert Gates, *re* Rogge	$29 58	
Fred Bueckwald	32 09	
		61 67
Tax Sales—		
Land bought by Township		1,809 72
Miscellaneous—		
Haileybury High School, fees	$132 00	
Library Grant	10 00	
Normandy, N., rent hall	5 00	
Routley & Summers, blue prints	16 95	
Hamilton Stamping Co., dog tags	4 25	
W. Dayment, watching fire	2 50	
F. Hoard, tax rebate	10 83	
Royal Bank, transfer account	29 62	
		211 15
Total payments		$26,252 51
Bank overdraft, 1st January, 1915		1,655 80
Bank balance, 31st December, 1915		3,764 64
		$31,672 95

TOWNSHIP OF BUCKE.

Collector's Roll Summary for the Year 1915.

Assessment.	Purpose.	Rate mills.	Amount.
415216	—Provincial War Tax	1	$416 22
415216	—General Township	14	5,813 03
415216	—General School	3½	1,454 38
55120	—Public School No. 2	9	496 09
222603	— " 4	19½	4,322 21
40875	— " 5	15	607 15
$3568	—Separate School No. 4	30	2,501 54
40875	—Public School No. 5, Debentures	4½	183 97
	Electric light		315 14
	Local improvements		467 05
	Total levies, year 1915		$16,576 79
	Tax arrears		13,641 07
			$30,217 86

Tax Rates for the Years 1911 to 1915.

	1911	1912	1913	1914	1915
Township, general	15	16	17	13	14
Schools, general	..	3	2	2½	3½
War tax	..	..	..	..	1
Schools No. 2, Public	8	2	5	5	9
No. 4, "	10	11	10	12½	19½
No. 5, "	..	..	..	7	15
No. 4, Separate	25	25	26	33	30

TOWNSHIP OF BUCKE.

Tax Account Reconciliation.

	1914 Roll.	
To tax arrears as per audit, 1st January, 1915	$14,566 46	
" unsold tax sale list, added to roll	1,754 08	
" tax sales costs added	192 53	
By cash paid as per cash book, 1915	.....	$2,752 76
" taxes written off by Council M. B. folio 287	.....	342 00
" taxes to be written of by Council per list	.....	167 74

By discounts allowed	.....	$367 90
" bank charges on deposits	.....	19 60
" duplicate assessments, Col. Roll folio 57	.....	432 38
" tax arrears not carried forward, per list	.....	29 72
" tax arrears carried forward	.....	12,400 97
	$16,513 07	$16,513 07

TAXES UNPAID IN 1914 COLLECTOR'S ROLL, NOT CARRIED FORWARD FOR THE VARIOUS REASONS GIVEN BELOW, AND TO BE DEALT WITH BY THE COUNCIL.

Page.	Name.	Explanation.	Amount.
7	Crysler, Chas. S.	Duplicate Ass.	$8 40
15	Fairhurst, W.	Business Asst. (dead)	27 13
26	Koch, T. C.	Duplicate Ass.	18 58
	Kammerer, J. A.	Error	86
43	Pittsburg Mining Co.	Duplicate Ass.	34 00
45	Rooms, C. D.	Duplicate Ass.	18 80
	Ritchie	Error	88
	Racicot	Duplicate Ass.	10 89
48	Sharp Lake Mining Co.	"	31 51
51	Thompson, Phil	"	5 34
	Totton, Lou	"	11 35

TOWNSHIP OF BUCKE.

TAX RECONCILIATION AT 31ST DECEMBER, 1915.

To current taxes, per Collectors's Roll for 1915	$16,576 79	
To tax arrears with 10 per cent. added	13,641 07	
By cash paid to collector, per sheets 1 to 12	.....	$7,928 70
By discount allowed, per sheets 1 to 12	.....	369 49
By taxes uncollected, 31st December, 1915	.....	21,919 67
	$30,217 86	$30,217 86
To taxes uncollected, 31st December, 1915	$21,919 67	
By cash paid to Treasurer C. B. 82, October, 1915	.....	$118 45
By taxes uncollected, 31st December, 1915	.....	21,801 22
	$21,919 67	$21,919 67

TOWNSHIP OF BUCKE.

TAX COLLECTOR'S BANK ACCOUNT, TO 31ST DECEMBER, 1915.

1915.	Bank Deposits.	Cheques to Treasurer.	Bank Charges.
Oct. 12	$357 38	.....	$0 60
14	469 39	$350 00	62
15	.....	140 00	.....
16	840 00	.....	.....
20	816 95	.....	1 26
23	258 36	2,250 00	17
29	326 19	.....	17
30	273 86	.....	17
Nov. 6	394 99	900 00	19
20	1,090 23	.....	2 44
22	.....	1,100 00	.....
Dec. 7	454 61	.....	77
9	465 00	.....	.....
11	.....	1,000 00	.....
28	1,851 04	.....	15
29	.....	1,850 00	.....
31	100 00	100 00	15
	$7,698 00	$7,690 00	$6 69

Bank charges		6 69
Balance, 31st December		1 31
	$7,698 00	$7,698 00

TAX COLLECTOR'S CASH RECONCILIATION, AT 31ST DECEMBER, 1915.

To cash collections, per sheet Nos. 1 to 12	$7,928 70	
By bank deposits as above		$7,698 00
By balance undeposited		230 70
	$7,928 70	$7,928 70

TOWNSHIP OF BUCKE.

OMISSIONS AND ERRORS IN 1915 COLLECTOR'S ROLL.

Omitted from Collector's Roll, 1915—		
(In Assessment Roll).		
Hubbert, Mrs. L., 123-125 Queen	$7 78	
Legault, Adolph, Part N. ½ of 12	21 82	
Moore, Arthur A., S.E. ¼ of S ½ 6	5 55	
Non-resident, N.W. ¼ of S. ½ 6	4 62	
		$39 77
Extension Errors in Collector's Roll, 1915—		
Philbin, Jas., 3 Con., Lot 508	$4 50	
Johnson, Alex., 3 Con. Pt. N. ½ of 10	6 00	
Plouffe, Omar, Arg.	1 00	
Darke, J. C., North Cobalt	18 25	
		29 75
Arrears not Entered in 1915 Roll—		
Ira Church, 92 Station	$18 19	
Mrs. P. T. Gannon, 110-112 Queen	2 89	
Latham, Thos., 153 Station	8 64	
		29 72
		$99 24

TOWNSHIP OF BUCKE.

PUBLIC SCHOOL NO. 2 ACCOUNT AT 31ST DECEMBER, 1915.

	Debits. Cash.	Credits. Requisitions & Grants.	Credits. Levies & Grants.
By Balance due Board 1st Jan., 1912, on 1911 Requisiton	.....	$355 00	$355 00
" Balance due Board 1st Jan., 1912, on 1911 Grants	.....	160 00	160 00
" Requisition for 1912	.....	100 00	112 66
" " " 1913	.....	400 00	406 80
" " " 1914	.....	200 00	281 03
" " " 1915	.....	450 00	496 09
" Grant for 1912	.....	150 00	150 00
" " " 1913	.....	150 00	150 00
" " " 1914	.....	150 00	150 00
" " " 1915	.....	150 00	150 00
To Cash paid in 1912	$560 00	.....	.....
" " " 1913	355 00	.....	.....
" " " 1914	550 00	.....	.....
" " " 1915	550 00	.....	.....
	$2,015 00		
To Balance due on Requisitions, 31st December, 1915	250 00		
	$2,265 00	$2,265 00	

Levies and Grants	$2,411 58
Less Payments	2,015 00
Balance due on Levies, 31st December, 1915	$396 58

TOWNSHIP OF BUCKE.

Public School No. 4 Account at 31st December, 1915

	Debits. Cash.	Credits. Requisitions & Grants.	Credits. Levies & Grants.
By Balance due Board 1st Jan., 1912, on 1911 Requisition	.....	$900 00	$900 00
" Balance due Board 1st Jan., 1912, on 1912 Grants	.....	250 00	250 00
" Requisition for 1912	.....	2,200 00	2,209 36
" " " 1913	.....	2,500 00	2,553 25
" " " 1914	.....	3,000 00	2,937 23
" " " 1915	.....	3,800 00	4,322 21
" Grant for 1912	.....	250 00	250 00
" " " 1913	.....	350 00	350 00
" " " 1914	.....	350 00	350 00
" " " 1915	.....	450 00	450 00
To Cash paid in 1912	$1,600 00	.....	.....
" " " 1913	2,300 00	.....	.....
" " " 1914	2,200 00	.....	.....
" " " 1915	2,500 00	.....	.....
" Debenture Issue Costs, By-law No. 166	85 25	.....	.....
	$8,685 25		
To Balance due on Requisitions, 31st December, 1915	5,364 75		
	$14,050 00	$14,050 00	

Levies and Grants	$14,572 05
Less Payments	8,685 25
Balance due on Levies, 31st December 1915	$5,886 80

TOWNSHIP OF BUCKE.

Public School No. 5 Account at 31st December, 1915.

	Debits. Cash.	Credits. Requisitions & Grants.	Credits. Levies & Grants.
By Requisitions for 1914	.....	$300 00	$323 95
" " " 1915	.....	600 00	607 15
" Grants for 1915	.....	150 00	150 00
" Levies Debentures 1914, By-law No. 173	.....	231 88	231 88
" Levies Debentures 1915, By-law No. 173	.....	183 97	183 97
" Debenture Proceeds, 1914, By-law No. 173	.....	1,200 00	1,200 00
" Debenture Proceeds, 1915, By-law No. 173	.....	1,155 00	1,155 00
To Cash paid, 1914	$1,200 00	.....	.....
" Cash paid, 1915	1,706 00	.....	.....
" Debenture Issue Costs, By-law No. 173	49 00	.....	.....
" Debenture No. 1 redeemed, By-law No. 173	200 60	.....	.....
	$3,155 60		
To Balance due on Requisitions, 31st December, 1915	665 25		
	$3,820 85	$3,820 85	

Levies and Grants	$3,851 95
Less Payments	3,155 60
Balance due on Levies	$696 35

TOWNSHIP OF BUCKE.

SEPARATE SCHOOL NO. 4 ACCOUNT AT 31ST DECEMBER, 1915.

	Debits. Cash.	Credits. Requisitions & Grants.	Credits. Levies & Grants.
By Balance due Board, 1st Jan., 1912, on 1911 Requisition	.....	$865 00	$865 00
" Balance due Board 1st Jan., 1912, on 1911 Grant	.....	350 00	350 00
" Requisition for 1912	.....	1,500 00	1,469 83
" " " 1913	.....	2,500 00	2,542 38
" " " 1914	.....	2,500 00	2,671 92
" " " 1915	.....	2,200 00	2,501 54
" Grant for 1912	.....	350 00	350 00
" " " 1913	.....	450 00	450 00
" " " 1914	.....	450 00	450 00
" " " 1915	.....	450 00	450 00
To Cash paid in 1912	$1,215 00	.....	.....
" " " 1913	2,950 00	.....	.....
" " " 1914	2,850 00	.....	.....
" " " 1915	2,948 69	.....	.....
	$9,963 69		
To Balance due on Requisitions, 31st December, 1915	1,651 31		
	$11,615 00	$11,615 00	
Levies and Grants			$12,100 67
Less Payments			9,963 69
Balance due on Levies, 31st December, 1915			$2,136 98

TOWNSHIP OF TILBURY EAST—PROVINCIAL GOVERNMENT AUDIT.

CHATHAM ONT., July 27, 1916.

Report of special inspection, audit, and examination of the books, accounts, vouchers and moneys of the Municipal Corporation of the Township of Tilbury East, in the County of Kent.

Under the appointment by the Provincial Municipal Auditor, confirmed by an Order-in-Council approved by His Honour the Lieutenant-Governor of the Province of Ontario, the 7th day of March, A.D. 1916, A. F. Falls, Fellow of the Institute of Chartered Accountants of Ontario, of the City of Chatham, was instructed and empowered to make an inspection, audit and examination of the books, accounts, vouchers and moneys of the Municipal Corporation of the Township of Tilbury East.

In pursuance of the said authority and instructions the said A. F. Falls hereby reports that he has made an inspection, audit and examination of the various accounts of the said Corporation.

The audit is made upon the petition of certain ratepayers addressed to the Provincial Municipal Auditor.

SCOPE OF AUDIT.

The inspection and examination under the authority of the Order-in-Council covers the period from 1906, the time up to which a previous Government Audit was extended by the Council of 1905, to December 31st, 1915. The Council of

1916, when the Government Audit was called for, decided that the accounts of 1915 be audited by whoever the Government appointed.

Alex. Farquharson, Clerk, has filled the office continuously since 1901.

Wm. McK. Graham, Treasurer, has filled the office continuously since 1906.

In conformity with my usual custom ratepayers were invited to attend a meeting at the Town Hall, Valetta, July 5th, 1916, to ask questions, make statements, lay complaints or charges respecting the conduct of the affairs of the Municipality.

The only complaint was made by Mr. Beno in reference to settlement of the 1908 tax roll of which he was Collector. The settlement of the 1908 roll was correct and did not show anything owing to Mr. Beno.

Assessment and Collector's Tax Rolls.

The Assessment Rolls were compared with the Collector's Rolls for each year covered by this audit and found correct.

The tax rolls are carefully prepared, properly re-capitulated and certified. The Collector's settlements with the Treasurer have been checked, also the arrears of taxes returned to the County Treasurer.

In tax rolls of 1908, 1909, 1910, and 1914 the date taxes were paid was not entered in the Collector's Roll, but instead only the word paid was written opposite the amount.

The date of the tax demand is entered in the roll opposite the name of each ratepayer. In the roll of 1914, although the roll is certified as delivered to Collector on November 2nd, 1914, very few ratepayers were notified of their taxes in November, and some of the largest taxpayers were not notified till after the 10th of December, with the result that only $10,000.00 of the 1914 taxes were collected in 1914 while the Township was paying interest on a large bank overdraft.

In 1914 Section 100 of the *Assessment Act,* Chapter 195, R.S.O. 1914, was amended by inserting the word townships after the word towns. This permits the council of townships to pass by-laws authorizing the Collector to mail instead of delivering tax notices. If this were adopted and notices sent out immediately the roll was delivered to the Collector there would be a considerable annual saving in interest to the township.

It would be a great advantage to have the roll in the Collector's hands at an earlier date than in recent years. In 1915 roll the record shows that notices were not sent to a number of ratepayers till January, 1916, months after the time the taxes should have been paid.

By adopting the privilege, now legal, of notifying by mail instead of by personal service the Council should take steps to have the taxes collected in the year they are imposed.

The tax roll should be in the Collector's hands by October 1st and returned on December 14th. If a penalty were imposed on all taxes not paid on December 15th most of the taxes would be paid by that date.

It is not economy to delay the roll on account of a few drainage by-laws in order to get them on the roll of that year and delay the collection of thousands of dollars of taxes. The roll now amounts to over $70,000.00. The collection of this money by December 15th will save interest as well as enable the payment of county rate and the money due to school sections on time to permit these amounts appearing in the books of the sections in the year before they are audited.

If the Council of 1916 will pass a by-law imposing 2 per cent. on unpaid taxes on December 15th, 2 per cent. more on January 1st, and 1 per cent. more on

February 1st, no one will be seriously affected and those who can pay promptly will be on time instead of waiting to the last.

There are ratepayers in Tilbury East whose farms are clear of debt and have money out at interest who have borrowed from the Township as much as $1,000.00 at 5 per cent. to put in tile drainage because it saved them calling in loans bearing a higher rate of interest. Such careful financiers frequently do not pay their taxes till the last few days before a penalty is imposed. It is usually the case that the tax of the man in easy circumstances is delayed while the poor man's tax is more promptly paid.

The importance of the Council insisting on the earlier collection of taxes than has been the case in the past few years cannot be too strongly pointed out. The larger the amount of taxes the greater the urgency.

The Treasurer makes proper journal entries for the tax rolls each year.

The tax rolls are returned so that arrears are in the County Treasurer's hands before May 1st so that 10 per cent. can be added.

On the return of the 1915 tax roll the Clerk has complied with the section of the Act which requires him to notify ratepayers of taxes that have been returned as unpaid to the County Treasurer against lands.

The Collector's settlement of 1915 tax roll with the Treasurer in April, 1916, has been checked. The amount overpaid by the Collector is $5.90, this is $1.20 more than original settlement. Two items of sixty cents each of statute labour for which the Collector was entitled had been omitted.

Arrears of Taxes.

Record of these is kept in a proper book for the purpose; the arrears were checked with the records in the County Treasurer's office and found correct. This record was brought up to date after the return of the 1915 roll and the attached statement Schedule No. 6 contained a statement including the 10 per cent. interest added May 1st, 1916.

Bonds.

Bond of the Treasurer in Dominion of Canada Guarantee and Accident Insurance Company for $5,000.00.

The Collector's bond is for $15,000.00 signed by Henry, Edward, Albert and Charles W. Davidson.

By-Laws.

The by-laws of the Township are not copied in a book but are kept in order by years. They are carefully prepared, some idea of the volume of work performed by the Clerk may be ascertained when it is known that in 1915 there were 76 by-laws passed, the majority of which were in connection with Municipal and tile drainage.

Officers.

It never has been my privilege to audit the books of any township where the Treasurer's books were so complete. Journal entries are properly made for the tax roll, interest, arrears of taxes, etc.

The Clerk's books, records and minutes are most carefully kept and recorded. It is a pleasure to audit tax rolls so neatly and carefully prepared. The annual by-law striking the rates of taxes contains full details in reference to everything to be levied for on the roll and might be copied by other townships to their advantage.

All documents and records in the Clerk's office show the greatest evidence of careful watching of the townships' interests.

The salaries paid the officials does not properly compensate for the way the work is performed. The remuneration of the Clerk is absurdly small in comparison with the amount of work and the way it is performed.

Statute Labour.

Statute Labour has been done away with for some years in this Township. The money is all collected on the roll and disbursed by the members of the Council in the divisions in which they are commissioner.

Ratepayers are permitted to commute their charge for statute labor for a period of years by performing ditching or other road work in one year under the commissioner of the division.

The method of administering the statute labor question is a great improvement on that in use in many other townships.

Schools.

The secretary-treasurer of each school section receiving money collected on the township tax rolls was notified and requested to bring his books to the township hall at Valetta to be checked with the Township records. The majority of them complied and the books generally were found to be correctly and carefully kept.

In some instances the school funds are not kept in a bank account in the name of the section. Interest on school money should go to the credit of the section and should not constitute all or part of the remuneration of the official. It would be well for the ratepayers in every section to see that the section gets interest on the bank balance each year, and that a resolution be passed to authorize the payment of the secretary-treasurer for his services.

The delay in the schools receiving their money from the Township in the year in which it is collected has been the cause of error in the books of some sections. In Public School Section 6 the auditors required the secretary-treasurer to enter each year the amount due from the Township although the money had not then been received. In checking these entries against the Township books it was found that since 1909 there had been received from the Township $16.42 more than the requisition. Mr. Atkinson, the Secretary-Treasurer, has charged himself in the School Cash Book with this amount.

Union School Section No. 1, Tilbury and Raleigh.—In 1910 Mr. J. J. Bradley was Secretary-Treasurer. He received $135.00 from Tilbury East being their share of the general school rate for 1909. In some way this item was never entered in the School Cash Book, but $23.76 was entered twice in that year. The difference, $111.24, has now been paid over to Mr. Wm. Larsh, Secretary-Treasurer, by Mr. Bradley. Mr. Bradley never kept a separate bank account for the school funds and when he turned over the cash in 1911 to his successor he paid what the Cash Book and Auditors showed was due the Section.

None of the sections have bonds from officials of the sections for the proper performance of their duties.

Tile Drainage.

Prior to the year 1911 only a few debentures had been issued under the Tile Drainage Act. In 1911 and every year since ratepayers have availed themselves of this method of borrowing money for tiling purposes. By the Act of 1914 the rate of interest was raised to 5 per cent. and the Council passed a by-law requiring the repayment of loans in ten years, this did not diminish the demand for loans under this Act.

In this Township in 1914 and 1915 money has been loaned to ratepayers before the issue of the debentures and procuring the money from the Ontario Government. This is not in accordance with the Act, which provides for the passing of the by-law authorizing the loan, issuing the debentures and borrowing the money. Sec. 12 reads: "The Council shall lend the money so borrowed only for the purpose of tile, stone or timber drainage and for a term of ten or twenty years, in such sums of one or more hundreds of dollars to persons entitled to borrow."

The result of not first procuring the money according to the Act and afterwards lending it to the ratepayers is that in 1916 debentures were sold to the Provincial Treasurer for $17,500.00, nearly all of which had been advanced out of the Township funds. That method was adopted by the Township because they could not then get the money from the Government, it was a great convenience to the ratepayers who borrowed, but it was illegal and has been discontinued. Owing to the delay in issuing the debentures some of the levies go on the rolls the year previous to the maturity of the coupon, while others go on the roll the same year as the coupons are due.

The limit of $40,000 to be loaned to any municipality was reached by this Township and the Act again amended in 1916 extending the amount to be loaned to one township to $50,000.00. Applications are now in the hands of the Council for more loans than they can borrow for under the Act.

There is a great deal of extra work to the Clerk in connection with tile drainage for which he should be remunerated.

The attention of the Council was drawn to the fact that many of the ratepayers were borrowing sums from $500.00 to $1,000.00 for tile draining, which did not appear in the registry or other land office against the lands and that an innocent purchaser might not be aware of this liability against lands when he bought. The Council discussed the question of registering all such by-laws.

Sub.-Sec. 1, Sec. 296, Chap. 192 R.S.O. 1914, requires all money by-laws to be registered.

Sub.-Sec. 1, Sec. 2, Chap. 192, R.S.O. 1914, reads: "*Money By-Law* shall mean a by-law for contracting a debt or obligation or for borrowing money."

I would recommend that the Council have all these by-laws registered unless their solicitor advises that it is not necessary.

Debentures.

In recent years the sale of debentures has usually been the year after the drainage by-law was passed, and in some cases more than one year later. The first debenture being cancelled and not sold. It would be better, as far as possible, to have all the levies on the tax rolls to provide the funds to meet the debenture payments go to debenture redemption account and not be mixed up with the drain accounts as they have to be when all the debentures are not sold.

Debentures for school sections have been issued the same way, the first being cancelled. Public School Section No. 3 were advanced money and levies made on the roll to meet debentures, but no debentures having been issued the account being carried as an overdraft. Public School Section No. 2 and Public School Section No. 7, debentures were issued for loans to them, but the first debenture in each case was cancelled as not being sold. The result is that the coupons maturing in June and July of 1916 have to be charged to the school account and the levy for the first year placed to the credit of the School Section, because the first debenture was not sold and those sold did not realize the full amount asked for.

The attached statements show the debenture liability of the Township and its maturity by years.

The Dauphin Drainage Debenture Account and the Forbes Drainage Debenture Accounts have been gone into, and it is found that the levies under the Forbes Drainage Works by-law 14 of 1893 for the future the levy need not exceed $1,997.48 annually instead of levying the maximum amount of $2,420.79 as has been done in the past four years.

All outstanding debentures are carefully recorded in the Treasurer's Debenture Register and marked off by him as they are paid.

The present method of issuing debentures and cancelling the first works all right as long as the Township has such efficient officers as the Clerk and Treasurer, but with less expert municipal men in their positions the accounts would soon become badly mixed. The objection to this method is that when the first debenture is cancelled the first levy under the by-law has to be credited to the drain account. It is very much more simple that all levies to meet debentures should go to the credit of debenture redemption account instead of some going to any other account.

Award Drains.

There are a large number of award drains in the Township. These are recorded in a proper book and the papers in connection with them filed so they can be easily referred to.

The payments in connection with expense of the drains if collected on the tax roll has 7 per cent. added as required by the Act.

The Clerk has never been remunerated for the time occupied by him in connection with award drains. Sub.-Sec. 2, Sec. 5, Chap. 260, R.S.O. 1914, *Ditches and Watercourses Act* provides that "The Council shall pass a by-law for the payment to the Clerk of the Municipality of a reasonable remuneration for services performed by him in carrying out the provisions of the Act."

This was brought to the attention of the Council and a by-law should be passed at once to comply with the Act. The Council are to fix the remuneration, I would suggest that not less than $40.00 would be a reasonable sum per annum, and would draw the attention of the Council to the fact that the Clerk should be granted a lump sum for past services under this head for which he has not been remunerated.

General Remarks.

The books of the Municipality are so carefully run, yet there are some things in the conduct of the affairs of the Township which can be improved upon which are mentioned elsewhere in this report.

Tilbury East with a tax roll of over $70,000.00 a year should be as up-to-date and in no way behind any other municipality. It has been years in advance of the *Drainage Act* in regard to charging highway bridges to the general funds, but are behind many other municipalities in getting their taxes collected in the year in which they are imposed.

Interest.

Interest is figured on drain accounts with a few exceptions. The Forbes Debenture account, Dauphin Debenture accounts and No. 2 Government Aid account have not had any interest credited on the balance remaining from year to year. As the accounts of the drains which these credits represent are yearly charged with interest on the amount they are overdrawn, these credit accounts ought in fairness to be credited with interest yearly. This is a matter the Council should act on and pass a resolution for the Treasurer to credit interest on these for all years for which the drains were charged interest.

Romney Township Accounts.

Romney Township claim $175.00 and interest since May 20th, 1911, on Barton drain. The report was adopted by Tilbury East Council February 23, 1911. They also claim on No. 4 Drain $31.25 served September, 1914, and $23.75 on Cooper Drain. These last two items are claimed for deficits, details of how made up do not appear in either amending by-law which are for 25 per cent. of the original amount of the cost under previous by-law. No entry has been made for these last two items which will be adjusted when the Committee meets the representatives of Romney then proper entries will be made.

Tilbury East claim from Romney $50.00 under by-law 19-1910 Burgess and Carless Drain, also $33.77 under By-law 24-1913 No. 3 Government Drain.

The expenditures on townline between Romney and Tilbury East have not been adjusted for the past three years.

All these accounts will be gone into and adjusted when the committees meet. The question of interest on these items has been left in abeyance, subject to adjustment.

Raleigh Township Account.

Town line accounts are usually adjusted yearly, but drain accounts are not settled as often as they should be. There are outstanding items unsettled, some of which have since been paid.

Tilbury North Township Account.

The same remarks in regard to Raleigh apply. A settlement should be made at least yearly. Action should be taken to procure a settlement of outstanding items.

Vault or Fireproof Office for Treasurer.

From time to time resolutions have been passed by the Council to get estimates for a vault for the Treasurer, but so far there has been nothing done.

Some means of caring for valuable papers and vouchers of the Township should be provided either by building a fireproof office or a proper vault. A

fireproof office is very much preferable to a vault, as in many instances where vaults were provided in townships it has been found that the dampness has ruined documents because of the lack of ventilation or infrequency of the vault being opened.

If a fire were to destroy books, by-laws, drain and other reports considerable more expense would be incurred to replace some of the documents than would now provide preparedness or precautionary measures.

Commissioners.

Each member of the Council represents one of the five road divisions into which the Township is divided. He has full authority to spend the amount of Statute Labour collected on the roll and standing to the credit of his division account together with what is collected on the roll of the current year.

The principal of taxation is that each ratepayer will pay his just share of the expense necessary each year. Not that taxes will be levied and the money held unexpended from year to year as has been the case in the road divisions of this Township for many years.

On December 31st, 1915, there was standing to the credit of the road divisions which the Councillors had a perfect right to spend on the roads in 1915 the following amounts:

Road	Division	No.	1	$745 91
"	"	"	2	456 78
"	"	"	3	284 31
"	"	"	4	430 94
"	"	"	5	541 34
				$2,459 28

Because previous members of the council did not expend the amount at credit of the account in their division is no reason why succeeding councillors should think it necessary to show as much standing to the credit of their division at the end of the year. Unless the money is needed and is going to be used it should not be collected from the ratepayers.

In checking over the expenditures on roads there are a number of items charged to roads and bridges for which the order is signed by the member of council and expended in his division. Legally a councillor has no right to issue orders to be charged to any other account than his division account or a drain which he has been properly appointed commissioner of. Steel for bridges and other material and labour have been paid for by an order signed by a commissioner, for which he has no legal right to assume the functions of the Council who should pass upon such accounts and issue an order signed by the Reeve and Clerk. This has been the custom for years, but it should be stopped. It is wrong and if persisted in may lead to irregularities that might cost the Township considerable money. The fact that the Township has not sustained a loss by loose methods should not have any weight in deciding to correct what is wrong.

There are roads in Tilbury East that are reported to be sadly in need of improvement, in fact at times some of them are stated to have been closed to traffic on account of their conditions. It is possible this might not have been the case had the taxes collected been expended instead of hoarded for the future.

I do not blame the present Council for some of the errors that exist in the system of administering the affairs of the Township. The present Council learned

how to carry on the business from those before them. It is the duty of the present members to improve the methods and rectify errors of the past and make such changes that the affairs will be legally conducted or other changes where better results will obtain and where the interests of the Township will be safeguarded.

In connection with expenditures on townlines about which there is so much delay and trouble in getting settlements, it would be better if the Commissioner of each township would meet and sell what work or repairing is to be done, each Commissioner to issue an order for his share only when the work is completed.

Drainage.

Drainage and the work in connection with it occupies the greater part of the time of all the officials of the Township.

A careful examination of all the drainage accounts has been made. The number of orders issued by the different commissioners is far greater than those issued which are passed on by the Council, and for which orders are signed by the Reeve and Clerk. In a number of instances orders have been changed as to the account the item should be charged, and where part is charged to one account and part to another it is not always as clearly stated as it should be. In cases where there are charges to a number of accounts on the one order and there is not sufficient room on the face of the order for all the details, it would be better to state "to be charged as detailed on the back of the order," and there write clearly the accounts and amounts so the Treasurer will have no trouble in charging to the proper accounts.

Corrections have been made in the drain accounts for omissions and improper entries. The standing of each drain account is shown in the attached schedule which forms part of the asset and liability statement herewith.

The Township of Tilbury East have for years acted in connection with the bridges over drains when the drain crossed the travelled portion of the highway contrary to *The Municipal Drainage Act,* by charging all the cost of such bridges to roads and bridges account of the Township and not to the drain account by a resolution of Council, regardless to whether the engineer included the bridge as part of the drain in his report or not. The fairness of the Council in so acting has been confirmed by the change in the law by the legislation in 1916, which gives councils power to pass by-laws making any or all highway bridges a charge on the general funds of the Township if the Council so direct. As the Clerk is now preparing a by-law and the legislature has validated such charges no further reference to them is necessary.

In the case of the Malott Diversion Drain the levies of $250.00 each against Tilbury Town and Tilbury East Township towards cost of bridges $500.00 was placed to the credit of the drain account, but the bridges were paid for and charged to roads and bridges. Correcting entry has now been made for the $500.00 which should not have been credited the drain account.

There are a number of drain accounts which are overdrawn and should be levied for in 1916, they are included in the following:

Asken Drain, By-law 17, of 1903, overdrawn	$5 39
Big Creek Drain, By-law 39, of 1915, overdrawn	2 40
Cook Drain, abandoned, overdrawn	20 19
Carley Drain, By-law 36, of 1905, overdrawn	3 92
Closson Drain, By-law 26, of 1899, overdrawn	8 34

Graham Drain, By-law 19, of 1903, overdrawn	9 41
Hope Drain, abandoned, overdrawn	36 73
Johnston Drain, abandoned, overdrawn	38 84
Kelly Drain, abandoned, overdrawn	22 66
Kippen Drain, By-law 16, of 1909, overdrawn	4 83
Kennedy Drain, abandoned, overdrawn	43 56
This is now included with the Bachard Drain.	
Lewis Drain, By-law 53, of 1905, overdrawn	13 82
Moffat Extension Drain, By-law 26, of 1910, overdrawn	178 99
Malott and Tilbury Drain, By-law 16, of 1903, overdrawn	49 42
Malott Diversion Drain, By-law 11, of 1909, overdrawn	32 07
McLeod Drain, By-law 18, of 1903, overdrawn	12 06
No. 1 Government Outlet Repair Drain, By-law 23, of 1906, overdrawn	98 13
No. 1 Government and McDougal Outlet Drain, By-law 25, of 1907, overdrawn	96 86
Peltier Drain, under By-law 18, of 1910, overdrawn	8 13
Sinclair Drain, under By-law 5, of 1903, overdrawn	7 64
10th Con. 1 and 2 Drain, under By-law 25, of 1914, overdrawn	28 69
10th Con. 3 and 4 Drain, under By-law 20, of 1914, overdrawn	17 44

The following drains are overdrawn but there are levies to be made in 1916 to go to their credit or new issues of debentures have not yet been sold:

Chalmers No. 1 Drain, By-law 11, of 1911, overdrawn	$8 48
Levy to go on 1916.	
Campbell Drain, By-law 50, of 1915, overdrawn	303 05
Debentures not sold.	
Dauphin Pump, overdrawn	2,292 12
Under By-law 27, of 1913, there is still to be levied $367.57 in 1916; the annual pumping rate in 1916 will have to be higher than the two previous years to cover the account.	
Forbes Pumping, overdrawn	62 79
This will be taken care of in the annual levy for pumping in 1916.	
Forbes Repair, under By-law 17, of 1910, overdrawn	767 78
This will be covered by collection in 1916.	
King & Whittle, under By-law 20, of 1909, overdrawn	922 93
Under Sup. By-law 25, of 1913, there is still to be collected in 1916 $648.34, but there will still be an overdraft not provided for. This should receive attention.	
McGregor Drain Pump, overdrawn	492 42
This is taken care of by new By-law No. 4, passed in 1916, for which debentures will be sold, spread over six years.	
McIntosh Drain, overdrawn	177 50
Under amending By-law 42, of 1914, $178.53 will be collected and credited in 1916.	
McKim West, under By-law 55, of 1915, overdrawn	22 65
Debentures have not yet been sold nor the work completed.	
Government No. 3 Drain, under By-law 18, of 1915. overdrawn	1,488 31
When the debentures are sold there will still be an overdraft, which should be covered by an amending By-law in 1916, and Romney Township promptly served with a copy.	
Philips Drain, under By-law 47, of 1915, overdrawn	83 25
Debentures not yet sold, and work has not been completed.	
Pike & Dauphin, Improvement of Raleigh Township. On December 31, 1915, this account has a credit balance, but in 1916 Raleigh has been paid $2,083.75 for Tilbury East Assessment for deficit. A by-law will have to be passed for this in 1916.	
Powell Drain, being repaired under By-law 58, of 1915, overdrawn	372 63
Debentures have not been sold.	
Raleigh Plains Drain, under By-law 18B, of 1915, overdrawn	235 73
After charging $589.50 and placing it to the credit of Raleigh Township, who should have been paid in 1915, under By-law 18B, of 1915. there is $378.77 to be collected and credited this account in 1916.	
Ross, Norry & Kelly Drain, under By-law 6, of 1916, overdrawn	442 88
Debentures have not yet been sold.	

The Government 2 and 3 Drain Under By-Law 3 of 1900.

This drain account is overdrawn $751.93. It is charged interest yearly. One hundred and eighty-six dollars and twenty-one cents is transferred to its credit from Government No. 2 Aid Government Grant Account which now has a credit balance of $743.85, but on which interest was not credited. The wiping out of these two accounts would do no one any injury and facilitate the bookkeeping of the Township. The Council should give the Treasurer authority to make the entry.

There are a number of drain accounts that have credit balances. In most instances they are accounts of drains which are now under repair not yet completed, nothing can be done with these accounts till the work is all done and paid for.

In this township from year to year the drain accounts have been more carefully watched than in most townships in which it has been my privilege to investigate and the interest of the ratepayers has been carefully looked after. With so many drains and a tax roll of over $70,000.00 it is not possible to look after and levy for every drain that is overdrawn a few dollars.

While in many instances transactions have not been strictly legally done, yet the best interests of the ratepayers was in evidence.

Pumping Schemes.

Each year a great many orders are issued by the Commissioners of pumping schemes which are replaced by orders drawn by the Reeve or other Councillors who retain the original order which is really the authority for the expenditure. It would be very much better if the Reeve or other Commissioner who issues the second order would countersign the original order issued, on which are the particulars of the work or material furnished, and the Bank be authorized to pay such orders when properly countersigned. In this way much time would be saved to the Reeve and Councillors besides the records would be more complete. On the order forms of the different pumping schemes could be printed "Merchants Bank of Canada, Tilbury, Ontario, please pay this order when properly countersigned by the Reeve or a member of the Council." This method has been adopted in other municipalities where the order of the Commissioner of the Scheme requires the signature of a member of the Council before it will be paid by the Bank.

General Remarks on Drains.

The method of charging all highway bridges over drains that cross the travelled portion of the road has already been referred to. While this was illegal till the legislature changed the law in 1916. the system was generally applied in the township and was in the opinion of the Councillors in the best interests of all the ratepayers.

There are a large number of drain accounts overdrawn, made up of small charges for minor repairs, these should not be allowed to run from year to year without being levied for under an amending by-law, particularly when other municipalities contribute to the upkeep. The other municipalities should be promptly served with a copy of all by-laws in which they are interested and the date of service recorded in the minutes of the Council.

As is usually the case the settlement with other townships for drains is

delayed from year to year, the delay is always greater when there is only a charge against the roads. Romney claim $175.00 on Barton Drain due since May 20, 1911. On the other hand Romney owe $50.00 on Burgess and Carless Drain under by-law 1910 and $33.77 on No. 3 Government Drain under by-law of 1913. If the Clerk were a member of the Committee to settle accounts with other Municipalities amounts due in connection with drains could be taken up when settlements of townline expenditures are adjusted.

Financial Standing.

The financial standing of the Township is shown in the attached Asset and Liability statement.

The Available Assets exceed the Current Liabilities by $16,602.09 which is an excellent position to be in and shows that the affairs of the Township have been carefully looked after and reflects credit on the officials and members of the Council of the past years.

Recommendations.

That the tax roll be completed Oct. 1st, and turned over to the Collector as soon after that date as possible.

That advantage be taken of amendment to the Act which permits Townships to notify taxpayers by mail instead of by personal service.

That the Council impose a penalty for unpaid taxes on Dec. 15th so that School Sections can be paid on time and bank overdraft covered before end of year.

That orders issued by Commissioners of Pumping Schemes be countersigned as authority for payment instead of the issue of a second order to pay the original, so that in checking the payments the Auditor will have in the one document the particulars as originally written.

That all orders be written in ink or indelible pencil in future.

That members of the Council confine the issuing of orders for payment of township money to the Road division in which they are Commissioners or against drains for which they have been properly appointed Commissioner. They have absolutely no legal right to issue orders chargeable to Charity, Roads and Bridges or any other General fund account unless the amount has been authorized by Council or a special appropriation provided by levy on the roll or recorded in the minutes of Council.

That as far as possible debentures be issued and sold so that all levies placed on Collector's roll to meet debentures will go to the credit of Debenture Redemption Account and not complicate entries by having the first debenture cancelled which necessitates placing the first debenture levy to the drain account.

That a vault or fireproof office be provided for the Treasurer for the safe keeping of books and records.

That all tile drainage by-laws loaning money to ratepayers be registered unless the township solicitor gives a written opinion that it is not necessary.

Conclusion.

The amount of business transacted in the township of Tilbury East is growing year by year and occupies more of the time of officials than ever. The Reeve

and Members of Council are called on to attend an average of two meetings of Council or Courts of Revision monthly.

The affairs of the township have been ably and carefully deducted and it is remarkable that so few corrections were necessary as a result of this audit.

Good results will accrue from this Audit if the Council will carry out the recommendations and suggestions made to them at their meetings which I was privileged to attend and those mentioned in this report.

The attention of the Council is specially called to the following on which there should be immediate action:—

Tax Roll should be complete by October 1st.

Penalty for unpaid taxes should go on December 15th.

By-law authorizing tax notices to be mailed should be passed.

Councillors discontinue issuing orders to be charged to Roads and Bridges unless specially authorized by motion recorded in the minutes.

By-laws be passed to collect amounts for which drain accounts are overdrawn.

I desire to thank the officials and others for valuable services rendered during this Audit.

The attention of the Council is called to Section 15, Chap. 200, R.S.O. 1914, which requires that recommendations made in this report be carried into effect.

I shall be pleased to furnish any further explanation or advise with the Council in reference to any of the matters referred to and recommendations contained in this report.

Yours very truly,

A. F. Falls,
Chartered Accountant.

Chatham, Ontario, July 27th, 1916.

TOWNSHIP OF TILBURY EAST.

(Schedule No. 1.)

Assets.

As at December 31st, 1915.

Available Assets.

Taxes, 1915	$66,534 00	
" Arrears, December 31, 1915	541 15	
Tile Drain Loans Debentures, since sold for these	13,100 00	
Cement Tile on hand	1,014 93	
Lumber on hand	82 42	
Tilbury North Township	50 00	
School Section No. 3	212 92	
Drain Accounts Schedule No. 7	9,142 37	
Union National Gas Co.	18 50	
J. Beno (since paid)	7 07	
Maple City Oil & Gas Co.	100 00	
United Fuel Oil & Gas Co.	50 00	
Ridgetown Oil & Gas Co.	50 00	
Standard Oil & Gas Co.	50 00	
Dominion Oil & Gas Co.	50 00	
Marcell, D. & W., Drain	2 50	
Canada Co., appeal (since paid)	9 90	
Tilbury Telephone Co.	2 00	
F. D. Williams, D. & W., Drain	6 50	
		$91,024 26

Fixed Assets.

Town hall, etc.		1,750 00

Passive Assets.

Drainage and Other Debentures, Schedule 3	$119,293 53	
Tile Drainage Debentures and Interest Schedule No. 4	29,501 68	
		148,795 21
		$241,569 47

LIABILITIES.

Current Liabilities.

County Rate, 1915, including War Tax	$5,636 94	
Patriotic Fund	2,183 70	
Tile Drainage Levies, 1915, to meet 1916 Debentures	1,031 71	
Drainage Levies, 1915, to meet 1916 debentures	15,449 31	
Merchants Bank, Tilbury, overdraft	12,286 20	
Raleigh Township	589 50	
Romney Township	91 23	
Canada Oil & Gas Co.	50 00	
Tile Drainage Inspection	20 00	
General School Rate	77 99	
L.E. & D.R.R. Bonus Rate	1 74	
Payne Award	2 00	
Earl Coffell Award	23 00	
Road Division No. 1	745 91	
" " 2	456 78	
" " 3	284 31	
" " 4	430 94	
" " 5	541 34	
Government School Grants	74 56	
Accounts Payable, Schedule No. 2	2,654 38	
School Sections, Schedule No. 8	9,267 13	
Drains, Schedule No. 7	22,523 50	
		$74,422 17

Deferred Liabilities.

Drainage and other Debentures, Schedule No. 3	$119,293 53	
Tile Drainage Debentures and Interest Schedule No. 4	29,501 68	
		148,795 21
Assets exceed Liabilities		18,352 09
		$241,569 47

Available Assets	$91,024 26	
Current Liabilities	74,422 17	
Surplus Available Assets over Current Liabilities.	$16,602 09	

ACCOUNTS PAYABLE.

(Schedule No. 2.)

December 31st, 1915.

Paul Brusseau, pumping, McGregor Works	$3 75
Jos. Lozon, pumping, Farmers' Works	7 60
Sy. Dauphin, D.D. Works	20 00
" Roads and B.	23 45
Nelson Hope, grading, Div. 3	1 00
D. Paulus, grading, Div. 1	1 00

Dauphin Spec. Deb. Account, 2 coupons	95 82
" " " 1 coupon	47 91
" " " 1 coupon	36 71
Thos. Patterson, fees, Line Fences	2 00
Albert Stenanson, scraping, Div. 1	2 00
Dauphin, Spec. Deb. Account, 1 coupon	36 71
J. A. Tremblay, Sep. School Sec. 1	375 75
R. J. Freiegel, loan, Tile Drainage	135 05
South. Ont. Gas Co., damages, Askew	6 00
Jas. Renucek, scraping, Div. 4	10 02
Kerr & McNevin, law account	11 58
Jno. Finn, refund, School Rates, September 3	68
Tilbury East Band, Grant	25 00
Alex. Farquharson, Payne Award	5 00
" " Barr Award	4 00
" " B. B. Smith Award	3 00
" " Dupius Award	3 00
" " Duquette Award	50
" " E. Coffell Award	4 00
" " R. Ford Award	4 00
" " Extra work, Tile Loans	30 00
" " Raleigh Plains Drain	15 00
" " By-law No. 3, Government Drain	40 00
" " " Wands Drain	20 00
" " " D.D. Works Imp. Drain	25 00
" " " McDougall Drain	50 00
" " " Campbell Drain	30 00
" " " Malott Drain	55 00
" " " Heinsburger Drain	20 00
" " " Coutts Drain	15 00
" " " W. J. Taylor Drain	15 00
" " " McGregor Drain	20 00
" " " Ross & Norry Drain	20 00
" " " Cook Drain	6 00
" " Selling Debs., Public No. 2	5 00
" " Selling Debs., Public No. 7	5 00
" " By-law, Pound Keeper	10 00
" " Extra work, Philips Drain	20 00
" " " McKim West Drain	20 00
" " " Powell Drain	3 00
" " Writing Tax Demands	25 00
" " Balance of Salary, 1915	250 00
" " Selecting Jurors	3 00
" " Secretary of Board of Health	7 50
Jno. McFeggan, half cost of Tile	33 00
W. J. Coutts, Grant, Public No. 2	45 35
Isaac Bechard, Loan, Tile Drainage	997 50
Township of Tilbury North, Costs, Duquette Award	3 50
	$2,654 38

DEBENTURE LIABILITY,

(Schedule No. 3.)

As at December 31st, 1915.

Maturity by Years.	Principal.
1916	$16,177 01
1917	16,208 54
1918	13,425 19
1919	13,461 42
1920	10,544 25
1921	5,814 39
1922	6,445 33
1923	4,195 13
1924	5,279 78

1925	3,605 80
1926	2,999 82
1927	3,069 40
1928	3,143 14
1929	3,222 13
1930	3,187 64
1931	2,128 64
1932	2,128 64
1933	2,128 64
1934	2,128 64
	$119,293 53

TILE DRAINAGE DEBENTURE LIABILITY,

(Schedule No. 4.)

December 31st, 1915.

Maturity by Years.	Interest and Principal.
1916	$2,749 68
1917	2,749 68
1918	2,749 68
1919	2,749 68
1920	2,749 68
1921	2,749 68
1922	2,749 68
1923	2,749 68
1924	2,749 68
1925	574 08
1926	574 08
1927	574 08
1928	574 08
1929	574 08
1930	574 08
1931	574 08
1932	463 68
1933	272 32
	$29,501 68

In 1916 $17,500.00 more tile drainage debentures have been sold, which will be added to the above in 1916.

COLLECTOR'S SETTLEMENT 1915 TAX ROLL.

April 29, 1916.

Henry Davidson.		
To Total Roll	$71,000 67	
" Interest collected	274 39	
By Cash collected, 1915		$4,466 67
" Cash collected, 1916		62,572 96
" Returned to County Treasurer		4,197 08
" Relieved by Council		44 25
To Overpaid	5 90	
	$71,280 96	$71,280 96

1915 COLLECTOR'S ROLL

(Schedule No. 5.)

As on December 31st, 1915.

To Total Roll	$71,000 67	
By Cash		$4,466 67
" Balance due		66,534 00
	$71,000 67	$71,000 67

ARREARS OF TAXES,

(Schedule No. 6.)

Including those returned in 1916 *on* 1915 *Roll.*

Con.	Lot.				
2	1	N.E. Cor., 1 Acre			$1 53
11	20	Pt. of S.E., Pt 16 Acres			11 36
2	10	N.W. Cor., ½ Acre			4 05
8	1	Part South Ry., ½ Acre			4 74
1	7	Part West of Creek, 151 Acres			62 38
1	8	Part West of Creek			22 45
2	8	Part between Bk. and Ry., 1½ Acres			15 45
2	9	S.W. ¼, 50 Acres			121 11
4	5	N.E. Pt. North of Creek, 11 Acres			1 98
4	4	Pt. North of Creek, D.D.W.			44 73
4	2	Pt. South of Creek, F.D.W., 10 Acres			23 32
4	4	Pt. South of Creek, F.D.W., 10 Acres			17 75
2	8	S.E. Pt. North Ry., 50 Acres			29 15
2	3	S.W. ½ of N.E. 2/5 of W. ½, 20 Acres			100 67
4	2	Part South Ry., 1 Acre			5 81
13	10	Part S.E., Pt. ¼ Acre			1 25
3	5	All S.W. of Creek, F.D.W., 12 Acres			57 00
2	3	S.W. ⅓ N.E. 2/5 W. ½, 20 Acres			100 65
3	5	South 50 Acres E. of Creek			183 12
Talbot Rd. West, Lot 173, E. ½, 100 Acres					82 15
6	10	S.E. Cor., 1 Acre			1 50
Talbot West, Lot 177, S.W. Pt., Glenwood Oil & Gas Co.					17 01
		Glenwood Oil & Gas Co.			624 10
4	3	South Part, 82 Acres			184 12
3	14	197	"		173 56
4	8	190	"		425 41
4	6	185	"		445 85
4	7	188	"		169 31
M.R.N.	14	S. ½ 98	"		8 81
M.R.N.	15	S. ½ 96½	"		19 21
1	12	All S.W. ¼ S. of Ry., 43 Acres			98 64
1	10	Pt. N. of Ry.			5 63
1	13	Pt. N. Pt. South of Ry., 50 Acres			96 35
1	11	Pt. E. Part South of Ry., 16 Acres			41 23
M.R.N.	10	C. ⅓ of South ½, ¼ Acre			2 50
2	11	S.½, W. ½ of W. ¼, 13 Acres			29 94
2	12	South 14 Acres of West Side, 14 Acres			37 26
3	6	Part	40	"	166 18
3	7		165	"	396 62
3	9		200	"	496 65
3	6	N. of Creek	13	"	55 60
8	8		163	"	31 76
4	5	Part S. of Creek, N.E. ¼	20	"	84 44
3	10	S. ½ N. ½	48	"	121 32
3	10	N. ½ S. ½	48	"	122 43
3	6	Part N.E., Pt.	14	"	48 83
4	14	Part N.E., Pt.	40	"	118 08
S. of Ry., Lot 177, W. ½ Talbot Rd.			½	"	9 98
9	15	North West Cor.	10	"	8 50
					$4,931 47

DRAINAGE BALANCES.

(Schedule No. 7.)

December 31*st*, 1915.

Drain.	By-law.	Debit.	Credit
Askew	17—1903	$5 39	
Askew, Tributary No. 1	36—1914		$100 18
Big Creek, Tilbury North	39—1915 only	2 40	
Badder	18—1914		83 37

Drain.	By-law.	Debit.	Credit.
Burgess and Carless	19—1910		13 48
Cook		20 19	
Coutts	49—1915		45 31
Conley	36—1905	3 92	
Clossem	1900	8 34	
Chalmers, No. 1	11—1911	8 48	
Chalmers, No. 2	14—1911		30 21
Clark	31—1905		1 57
Campbell	50—1915	303 05	
Davidson	35—1914		207 85
Dauphin Imp., 1915	34—1915		8,970 51
" Special Debenture Account			2,649 78
" Drainage Works		2,292 12	
Forbes, No. 1 and 2 Pumping		41 19	
" Special Debenture Account			3,611 26
" Repair, 1909	17—1910	767 78	
Farmers' Drainage Works	17—1913		1,295 45
Finn and Cooper, Raleigh Drain	5—1914		67 34
Graham	19—1903	9 41	
Hickey	19—1914		603 94
Hope	7—1902	36 73	
Hausberger South	48—1915		79 14
Johnston		38 84	
Kelly		22 66	
King and Whittle	12—1909	922 93	
King and Whittle, 4th Con.	20—1903		40 82
Kippen	16—1909	4 83	
Kennedy	25—1903	43 56	
Lewis	53—1905	13 82	
Moffat Extension	26—1910	178 99	
Moffat and Tilbury Drain	16—1903	49 42	
Murphy	13—1903		262 42
Malott Diversion	11—1909	32 07	
Malott Repair, 1915	57—1915		237 25
McDougall Repair, 1915	51—1915		1,063 82
McGregor Drain Pump	1—1891	492 42	
McIntosh	42—1914	177 50	
McKim West	55—1915	22 65	
McLeod	18—1903	12 06	
McLeod Extension	22—1914		19 74
No. 1 Government Rep., 1911	4—1912		491 40
No. 1 Government Outlet Rep.	23—1906	98 13	
No. 1 Government and McDougall Outlet	25—1907	96 86	
No. 2 and 3 Government	3—1900	751 93	
No. 2 and 3 Government Outlet, 1909	7—1910		970 89
No. 2 Government Aid Account	51—1905		743 85
No. 3 Government	18—1915	1,488 31	
Old Drain	17—1914		141 33
Peltier	18—1910	8 13	
Philips	32—1905	83 25	
Pike and Dauphin Imp.	15—1910		253 91
Powell	58—1915	372 63	
Raleigh Plains Drain	18—1915	235 73	
Ross, Norry and Kelly	6—1916	442 88	
Shepley	16—1914		74 36
Sinclair	5—1903	7 64	
12 and 13 Sideroad Drain	37—1914		178 42
10th Con., 1 and 2	23—1914	28 69	
10th Con., 3 and 4	20—1914	17 44	
Taylor's Drainage Works	54—1915		153 50
Wands	32—1915		132 40
		$9,142 37	$22,523 50

RECAPITULATION OF SCHOOL SECTION BALANCES.

(Schedule No. 8.)

December 31st, 1915.

Union Public School Section No. 1	.....	$365 89
" " " " " 2	.....	2,327 16
" " " " " 2	.....	699 78
" " " " " 3	$212 92	
" " " " " 4	.....	399 83
" " " " " 5	.....	1,263 66
Union School Section, Merlin No. 5	.....	1,300 58
Public School Section No. 6	.....	798 30
" " " " 7	.....	1,063 90
" " " " 8	.....	394 05
Union Public School Section No. 13	.....	366 31
R.C. School Section, Raleigh No. 6	.....	143 57
R. C. School Section, Tilbury N. No. 6	.....	112 25
Separate School Section, Tilbury N. No. 7	.....	31 85
	$212 92	$9,267 13

Union Public School Section No. 1

1915.				
Jan. 1	By	Balance	.....	$11 86
Dec. 31	"	General Rate, 1915	.....	156 00
" 31	"	Special Rate, 1915	.....	198 03
" 31	To	Balance	$365 89	
			$365 89	$365 89

1916—Jan. 1 By balance at credit $365 89

Public School Section No. 2.

1915.				
Jan. 1	By	Balance	.....	$1,386 63
Oct. 13	"	Proceeds of debentures	.....	3,505 72
Dec. 31	"	General rate, 1915	.....	600 00
" 31	"	Special rate, 1915	.....	941 33
" 31	"	Debenture levy, 1915	.....	496 81
Jan. 13	To	Paid on rates	$1,396 29	
	"	Paid on loan on new school	3,200 00	
Nov. 2		Registering by-law	2 04	
Dec. 31		Alex. Farquharson, selling debentures	5 00	
" 31	To	Balance	2,327 16	
			$6,930 49	$6,930 49

1916—Jan. 1 By balance at credit $2,327 16

Union Public School Section No. 2.

1915.				
Jan. 1	By	Balance	.....	$700 08
Dec. 31	"	General rate, 1915	.....	243 00
" 31	"	Special rate, 1915	.....	243 39
Jan. 28	To	Paid rates, 1914	$486 69	
Dec. 31	"	Balance	699 78	
			$1,186 47	$1,186 47

1916—Jan. 1 By balance at credit $699 78

PUBLIC SCHOOL SECTION NO. 3.

1915.				
Jan. 1	To	Balance	$636 57	
Dec. 31	By	General rate, 1915		$900 00
" 31	"	Special rate, 1915		1,547 26
" 31	"	Levy for debenture		468 28
	"	Separate No. 3, Jno. Finn, refund of rates		9 77
	To	Paid on rates	2,064 40	
	"	Paid loan current expenses	400 00	
" 31	"	Relief by county rate	43	
" 31	"	Interest on overdraft	36 83	
" 31	By	Balance		212 92
			$3,138 23	$3,138 23
1916—Jan. 1	To	Balance at debit	$212 92	

PUBLIC SCHOOL SECTION NO. 4.

1915.				
Dec. 31	By	General rates, 1915		$300 00
" 31	"	Special rates, 1915		399 83
" 27	To	Paid	$300 00	
" 31	"	Balance	399 83	
			$699 83	$699 83
1916—Jan. 1	By	Balance at credit		$399 83

PUBLIC SCHOOL SECTION NO. 5.

1915.				
Jan. 1	By	Balance		$1,350 68
Dec. 31	"	General rate, 1915		600 00
" 31	"	Special rate, 1915		663 66
Jan. 15	To	Paid	$1,350 68	
Dec. 31	"	Balance	1,263 66	
			$2,614 34	$2,614 34
1916—Jan. 1	By	balance at credit		$1,263 66

UNION SCHOOL SECTION NO. 5, MERLIN.

1915.				
Jan. 1	By	Balance		$1,306 33
Dec. 31	"	General rate, 1915		410 00
" 31	"	Special rate, 1915		430 26
" 31	"	Levy to meet debentures		234 77
Jan. 10	To	Paid rates	$840 50	
	"	Township of Raleigh	234 79	
Feb. 8	"	Stan. Robinson, taxes refunded	5 49	
Dec. 31	"	Balance	1,300 58	
			$2,381 36	$2,381 36
1916—Jan.1	By	balance at credit		$1,300 58

PUBLIC SCHOOL SECTION NO. 6.

1915.				
Jan. 1	By	Balance		$854 50
Dec. 31	"	General rates, 1915		600 00
" 31	"	Special rates, 1915		801 68
	To	Paid on rates	$1,457 88	
" 31	"	Balance	798 30	
			$2,256 18	$2.256 18
1916—Jan. 1	By	balance at credit		$798 30

PUBLIC SCHOOL SECTION NO. 7.

1915.				
Jan. 1	By	Balance	.....	$752 18
Oct. 13	"	Proceeds of debentures	.....	3,924 75
Dec. 31	"	Levy for debentures, 1915	.....	412 15
" 31	"	General rates, 1915	.....	300 00
" 31	"	Special rates, 1915	.....	749 68
	To	Paid on rates	$1,052 18	
	"	Paid loan on new school	4,000 00	
Nov. 2		Registering by-law	2 03	
Dec. 31		Alex. Farquharson, selling debentures	5 00	
" 31	To	Interest on overdrafts	15 65	
" 31	"	Balance	1,063 90	
			$6,138 76	$6,138 76
1916—Jan. 1	By	balance at credit		$1,063 90

PUBLIC SCHOOL SECTION NO. 8.

1915.				
Jan. 1	By	Balance	.....	$150 56
Dec. 31	"	General rates, 1915	.....	300 00
" 31	"	Special rates, 1915	.....	400 05
	To	Paid on rates	$456 56	
" 31	"	Balance	394 05	
			$850 61	$850 61
1916—Jan. 1	By	balance at credit		$394 05

PUBLIC UNION SCHOOL SECTION NO. 15.

1915.				
Jan. 1	By	Balance	.....	$290 23
Dec. 31	"	Special rates, 1915	.....	340 23
Jan. 15	To	Paid rates, 1914	$264 15	
Dec. 31	"	Balance	366 31	
			$630 46	$630 46
1916—Jan. 1	By	balance at credit		$366 31

SEPARATE SCHOOL SECTION NO. 1, TILBURY.

1915.				
Jan. 1	By	Balance	.....	$353 92
Dec. 31	"	Special rate, 1915	.....	375 75
Jan. 11	To	Paid rate, 1914	$353 92	
Dec. 31	"	Balance order outstanding	375 75	
			$729 67	$729 67

SEPARATE SCHOOL SECTION NO. 3.

1915.				
Jan. 1	To	Balance	$9 00	
	"	Paid	607 00	
Dec. 31	"	Jno. Finn, wrongfully assessed	15 40	
" 31	By	Special rates, 1915	.....	$631 40
			$631 40	$631 40

R.C. SCHOOL SECTION NO. 6, RALEIGH.

1915.				
Jan. 1	By	Balance	.....	$121 57
Dec. 31	"	Special rates, 1915	.....	143 27
Jan. 19	To	Paid rates, 1914	$121 27	
Dec. 31	"	Balance	143 57	
			$264 84	$264 84
1916—Jan. 1	By	balance at credit		$143 57

R.C. School Section No. 6, Tilbury N.

1915.				
Jan. 1	By Balance		.....	$72 20
Dec. 31	" Special rates, 1915		.....	112 25
Jan. 16	To Paid rates, 1914		$72 20	
Dec. 31	" Balance		112 25	
			$184 45	$184 45
1916—Jan. 1	By balance at credit			$112 25

Separate School Section No. 7, Tilbury N.

1915.				
Jan. 1	By Balance		.....	$36 60
Dec. 31	" Special rates, 1915		.....	31 85
Jan. 16	To Paid rates, 1914		$36 60	
Dec. 31	" Balance		31 85	
			$68 45	$68 45
1916—Jan. 1	By balance at credit			$31 85

(Schedule No. 9.)

LEDGER BALANCES.

December 31st, 1915.

Union School Section 5, Merlin	.....	$1,300 58
Union Natural Gas Co.	$18 50	
Arrears of taxes	541 15	
Tile Drainage Inspection Account	.....	20 00
County Rate	.....	5,636 94
Patriotic Fund	.....	2,183 70
Tile Drainage Loans	13,100 00	
Road Division 4	.....	430 94
" " 5	.....	541 34
" " 1	.....	745 91
Payne Award	.....	2 00
General School Rate Account	.....	77 99
Road Division 2	.....	456 78
Merchants Bank Overdraft	.....	12,286 20
Government School Grant Account	.....	74 56
Road Division 3	.....	284 31
Jos. Beno, 1914 Collector	7 07	
F. D. Williams, D. and W.C.	6 50	
Earl Coffell Award	.....	23 00
Collection of 1915 Taxes	66,534 00	
Tile Drainage Debenture Account	.....	1,031 71
Debenture Levies, 1916	.....	15,449 31
Account Payable	.....	2,654 38
General Funds	.....	18,352 09
Maple City Oil and Gas Co.	100 00	
Cement Tile Works	1,014 93	
United Fuel Oil and Gas Co.	50 00	
Ridgetown Oil and Gas Co.	50 00	
Township Real Estate	1,750 00	
Mancell D. and W.C.	2 50	
Canada Co. Appeal	9 90	
Tilbury Telephone Co.	2 00	
Township Lumber Account	82 42	
Public School Section No. 3	212 92	
" " " " 2	.....	2,327 16
" " " " 4	.....	399 83
" " " " 5	.....	1,263 66
" " " " 6	.....	798 30
" " " " 7	.....	1,063 90
" " " " 8	.....	394 05

Separate School Section No. 7		31 85
Union School Section No. 2		699 78
Separate School Section No. 6, Raleigh		143 57
Separate School Section No. 6, Tilbury N.		112 25
Union School Section No. 13, Tilbury N.		366 31
Union School Section No. 1		365 89
Standard Oil and Gas Co.	50 00	
Dominion Oil and Gas Co.	50 00	
L.E. and D.R.R. Bonus		1 74
Can. Oil and Gas Co.		50 00
Raleigh Township		589 50
Romney Township		91 23
Tilbury North Township	50 00	
Askew Tributaries No. 1		100 18
Big Creek, Tilbury N.	2 40	
Badder		83 37
Burgess and Careless		13 48
Campbell Repair, 1915	303 05	
Closson	8 34	
Coutts		45 31
Cook	20 19	
Chalmers No. 1	8 48	
Davidson		207 85
Dauphin D. Works	2,292 12	
Dauphin D. Works, Imp. 1915		8,970 51
Farmers' D. Works		1,295 45
Forbes D. Works, 1 and 2	41 19	
Henisberger South		79 14
Hickey		603 94
Johnston	38 84	
Kennedy	43 56	
Kelly	22 66	
King and Whittle	922 93	
Malott Repairs, 1915		237 25
Moffatt Extension	178 99	
McLeod Extension		19 74
McDougall Repairs		1,063 82
McKim West	22 65	
McIntosh	177 50	
McGregor's D. Works	492 42	
No. 1 Government		491 40
No. 3 Government	1,488 31	
No. 1 Government and McDougall Cut	96 86	
Old		141 33
Philips	83 25	
Powell Repair, 1915	372 63	
Pike and Dauphin Imp. Works		253 91
Raleigh No. 2 Drain Bridge		
Ross and Norry and Kelly	442 88	
Shepley		74 36
Taylor's D. Works, 1915		153 50
10th Con., 1 and 2	28 69	
10th Con., 3 and 4	17 44	
12 and 13 Side Road		178 42
Wands		132 40
Hope	36 73	
Sinclair	7 64	
Kippen	4 83	
Dauphin Special Debenture Account		2,649 78
Askew	5 39	
Malott Diversion	32 07	
Chalmers No. 2		30 21
Graham Drain	9 41	
Conley	3 92	
Lewis	13 82	
McLeod	12 06	
Malott and Tilbury Centre	49 42	
Forbes Repair, 1909	767 78	
Government No. 2 and 3	751 93	

No. 1 Government Cut Rep.	$98 13	
Peltier Drain	8 13	
Government No. 2 and 3 Aid	.....	743 85
4th Con., King and Whittle	.....	40 82
Raleigh Plains	235 73	
Forbes, Special Debenture Account	.....	3,611,26
Clark	.....	1 57
No. 2 and 3 Government Cut	.....	970 89
Murphy	.....	262 42
Finn and Cooper	.....	67 34
	$92,774 26	$92,774 26

Abstract of Receipts.

Year Ending December 31, 1915.

Receipts.

1915			
	Resident taxes, 1914	$47,987 35	
	Resident taxes, 1915	4,466 67	
	Arrears of taxes	514 53	
	Rents and leases	380 00	
	Interest	525 44	
	Licenses	100 00	
	Tile drainage	11,800 00	
	School purposes	1,093 72	
	Debentures	25,707 39	
	Drainage	1,588 15	
	Miscellaneous	329 87	
			$94,493 12
Dec. 31	Merchants Bank overdraft		12,286 20
			$106,779 32

Receipts in Detail for Year Ending December 31, 1915.

1915 — Resident Taxes, 1914.

Jan. 7	J. W. Beno, 1914 taxes	$600 00	
" 7	" "	3,200 00	
" 12	" "	2,300 00	
" 12	" "	3,900 00	
" 18	" "	1,656 00	
" 18	" "	18,016 00	
" 25	" "	1,050 00	
" 25	" "	1,212 00	
Feb. 1	" "	800 00	
" 1	" "	2,200 00	
" 19	" "	1,200 00	
" 19	" "	2,300 00	
" 23	" "	350 00	
" 23	" "	350 00	
Mar. 10	" "	3,200 00	
" 10	" "	800 00	
" 24	" "	2,500 00	
" 24	" "	196 99	
Apr. 13	" "	1,000 00	
" 29	" "	1,156 36	
			$47,987 35

1915 — Resident Taxes, 1915.

Dec. 17	Henry Davidson, taxes, 1915	$100 00	
" 18	" "	387 59	
" 18	" "	62 65	
" 18	" "	209 23	

Dec. 22	Henry Davidson, taxes, 1915	$95 00	
" 23	" "	138 70	
" 23	" "	136 11	
" 24	" "	30 40	
" 24	" "	629 50	
" 27	" "	167 87	
" 27	" "	455 08	
" 27	" "	448 11	
" 27	" "	456 12	
" 30	" "	5 27	
" 30	" "	277 57	
" 30	" "	53 93	
" 30	" "	693 54	
" 31	" "	120 00	
			$4,466 67

1915 Arrears of Taxes.

Jan. 6	Co. Treas. N. Pt. S. ½ Lot 1, Con. 10	$87 92	
" 6	" S. W. 1-3, N.E. 3-5, S. ½ Lot 3	103 19	
July 2	" S.W. ½, N.E. 3-5, W. ½ of Lot 3, Con. 2	126 36	
" 2	" S.E. ¼, Lot 21, Con. 9	41 70	
" 2	" S.W. ¼, Lot 20, Con. 9	29 10	
" 2	" Pt. Lot 7, West of Ck., Con. 1	78 91	
" 2	" Pt. Lot 8, W. of Ck., Con. 2	16 99	
" 2	" S.E. Pt. N. Ry. Lot 8, Con. 2	30 36	
			$514 53

Rents and Leases.

1915			
Jan. 14	Union Natural Gas Co.	$225 00	
Mar. 30	Jasperson	50 00	
" 8	C. P. Railway	30 00	
June 23	Union Natural Gas Co.	25 00	
Dec. 28	Canadian Gas Co.	50 00	
			380 00

Interest.

1915			
Jan. 21	Provincial Treasurer, on tile drainage	$131 89	
" 30	Merchants Bank, on deposit	16 55	
Feb. 28	" " " "	11 05	
Mar. 30	" " " "	13 05	
Apr. 30	" " " "	16 48	
May 31	" " " "	14 50	
June 30	" " " "	7 70	
" 29	Provincial Treasurer, on tile drainage	240 82	
July 31	Merchants Bank, on deposit	27 50	
Aug. 30	Merchants Bank, on deposit	9 90	
Oct. 30	Merchants Bank, on deposit	22 35	
Nov. 30	Merchants Bank, on deposit	13 65	
			525 44

Licenses.

1915			
Mar. 30	Assod. Emon Cigarettes	$100 00	
			100 00

Tile Drainage.

1915			
Jan. 21	Provincial Treasurer	$5,800 00	
June 29	" "	6,000 00	
			11,800 00

School Purposes.

1915			
Sept. 1	Ontario Government grants	$783 50	
Dec. 7	County of Kent	310 22	
			1,093 72

DEBENTURES.

1915				
July	3	Tenth Concession 3 and 4 drain	$323 44	
"	3	Tenth Concession 1 and 2 drain	278 68	
"	3	Badder drain	808 16	
"	3	Shepley drain	380 01	
"	3	Old drain	851 23	
"	3	Hickey drain	2,376 22	
"	3	McLeod drain	197 81	
"	3	Davidson drain	483 04	
"	3	Askew tributaries drain	813 06	
"	3	12 and 13 Side Road drain	1,030 69	
Oct.	1	Dauphin D. Works	10,457 06	
"	1	Wands drain	277 52	
"	13	Public School Section No. 2	3,505 72	
"	13	Public School Section No. 7	3,924 75	
				25,707 39

DRAINAGE.

1915				
Mar.	18	Township of Raleigh, Shepley drain	$10 00	
		" " " Mancell drain	32 79	
		" " " 3rd Concession bridge	1,093 16	
June	19	Strauss Land Co., Barr award	18 00	
"	23	H. H. Jones, Barr Award	1 40	
		Julius Dupuis, No. 3 Gov't	25 00	
July	3	Thos. Patterson, No. 3 Gov't	35 50	
		D. Thibert, No. 3 Gov't.	31 00	
		Robt. Ford, No. 3 Gov't.	6 25	
		John McFeggan, No. 3 Gov't	45 00	
		John Cowan, No. 3 Gov't.	43 00	
		J. Ainslie, No. 3 Gov't	14 30	
		J. Atkinson, No. 3 Gov't.	36 00	
		I. Bechard, No. 3 Gov't.	50 30	
"	19	P. M. R. R., No. 3 Gov't.	3 45	
		W. J. Way, Wands drain	6 00	
Oct.	4	Union Gas Co., damages, Chalmer No. 2	7 50	
Nov.	8	F. C. Dennison, costs Coffell awd.	11 00	
"	17	John Sloan, McDougall	50 00	
		" " Heinsberger	60 00	
Dec.	7	Julius Dupuis, award costs	6 50	
"	28	John Sloan, costs Coffell award	2 00	
				1,588 15

MISCELLANEOUS RECEIPTS.

1915				
Jan.	12	Hy. Atkinson, Statute labour, Div. 4	$36 00	
Mar.	18	Union Gas Co., Statute labour, Div. 4	16 00	
"	18	M. McKinley, Statute labour, Div. 1	5 00	
Apr.	24	Township of Raleigh, bal. of Town Line	107 37	
June	29	Provincial Treasurer, railway taxation	159 30	
Nov.	8	Mr. McKinley, wires old D. W. 1	1 20	
Feb.	1	Stanley Patterson, tile inspection	2 50	
Dec.	7	Robt. Jones, tile inspection	2 50	
				329 87
"	31	Total receipts		94,493 12
"	31	Merchants Bank, overdraft		12,286 20
				$106,779 32

ABSTRACT OF DISBURSEMENTS.

For the year ending December 31, 1915.

DISBURSEMENTS.

Salaries	$1,626 78	
Postage and stationery	530 57	
Election	94 15	

	Roads and Bridges	5,648 97	
	Road Division No. 1	391 60	
	" " " 2	392 00	
	" " " 3	502 26	
	" " " 4	433 44	
	" " " 5	891 55	
	Raleigh and Tilbury E. Town Line	299 36	
	Romney Town Line	69 50	
	Tilbury E. and Tilbury N. Town Line	4 03	
	Charity	346 35	
	County rates	3,092 38	
	Patriotic Fund	1,000 00	
	School rates	19,495 24	
	" grants	1,058 68	
	Interest	63 30	
	Board of Health	226 00	
	Debentures and coupons	15,096 35	
	" Dauphin ac.	2,559 52	
	" Forbes ac.	1,826 70	
	Tile Drainage coupons	3,345 84	
	" " Loans	24,686 20	
	" " Inspection	67 50	
	Drains, municipal	16,455 91	
	Award Drains D. and W. C.	302 10	
	Sheep and dogs	103 84	
	Miscellaneous	539 54	
			101,149 66
1915			
Jan. 1	Merchants Bank, overdraft		5,629 66
			$106,779 32

DISBURSEMENTS IN DETAIL.

Year ending December 31, 1915.

SALARIES.

1915			
Mar. 23	Joseph Beno, pt. salary as collector, 1914	$100 00	
Apr. 23	Wm. S. Mills, balance salary and com. fees	21 25	
" 23	A. A. Wilson, for auditing and material	76 85	
" 28	A. Farquharson, part salary	100 00	
May 7	Jos. W. Beno, balance of salary and postage as collector, 1914	35 00	
" 7	B. B. Smith, part of salary, 1915	40 00	
" 19	John Wands, part of salary, 1915	30 00	
	Mal. McKinley, part of salary, 1915	40 00	
	Wm. McK. Graham, part of salary as Treasurer	150 00	
" 20	Wm. F. Robertson, part of salary as Assessor	50 00	
" 21	John F. Fletcher, part of salary as Reeve	60 00	
" 26	Hy. Atkinson, part of salary as Deputy-Reeve	40 00	
June 2	George Irwin, salary as Auditor	15 00	
" 5	Alex. Farquharson, part of salary as Clerk	100 00	
" 29	Wm. F. Robertson, balance of salary as Assessor	85 00	
Dec. 22	B. B. Smith, balance of salary	65 00	
	Hy. Atkinson, balance of salary	66 00	
" 23	Jno. F. Fletcher, balance of salary	115 93	
	Wm. McK. Graham, balance of salary	175 00	
" 27	Jno. Wands, balance of salary	38 25	
" 28	M. McKinley, balance of salary	47 00	
Jan. 2	Alex. Farquharson, balance of salary, 1914	176 00	
			1,626 78

POSTAGE AND STATIONERY.

1915.			
Jan. 20	*Municipal World*, supplies	$0 50	
Feb. 10	*Municipal World*, supplies	5 50	
Mar. 27	Subscription to *Municipal World*	7 52	
" 30	W. W. Marshall, for printing	34 70	

Mar. 8	W. A. Shaw, for printing	24 05	
" 28	A. Farquharson, for stamps and expenses	14 26	
July 5	Register of Kent, for postage, by-law	05	
" 19	W. A. Shaw, for printing	35 80	
" 27	A. Farquharson, for stationery	12 95	
Aug. 6	W. A. Shaw, for printing	90 50	
Sept. 1	*Municipal World*, supplies	7 50	
" 10	W. W. Marshall, Auditor's Report	111 25	
Nov. 4.	A. Farquharson, stationery and stamps	18 75	
Dec. 1	W. A. Shaw, township printing	32 25	
Dec. 21	W. W. Marshall, township printing	25 00	
" 23	Wm. McK. Graham, post and stationery	7 94	
" 27	*Municipal World*, supplies	2 46	
" 28	Alex. Farquharson, post and stationery	18 54	
Jan. 2	Alex. Farquharson, post and stationery	18 08	
" 11	W. J. Coutts, post and stationery	2 00	
" 2	W. A. Shaw, printing	60 97	
			$530 57

ELECTIONS.

1915			
Mar. 23	A. F. McCarthar, fees for D.R.O.	$4 20	
	P. McKinlay, fees for D.R.O.	4 20	
	B. B. Smith, for use of hall	4 00	
" 24	David Fletcher, for use of school	4 00	
" 25	James McHardy, for use of hall	4 00	
	Wm. Blake, fees as poll clerk	2 00	
	A. G. Atkinson, fees as D.R.O.	4 80	
	Well. Shaw, fees as poll clerk	2 00	
" 26	Henry Sales, fees as D.R.O.	3 40	
" 27	Thomas Jones, fees as poll clerk	2 00	
	John Mitchie, for use of hall	4 00	
	Wm. J. Coutts, for use of school	4 00	
	John Finn, fees as D.R.O.	3 40	
" 30	Charles Tompkins, fees as D.R.O.	5 00	
" 31	John Feenan, fees as poll clerk	2 00	
	Wm. Trudell, fees as poll clerk	2 00	
	A. A. Shaw, for printing	16 75	
Apr. 1	A. W. Hornick, fees as D.R.O.	4 20	
	Wm. Graham, June fees as poll clerk	2 00	
" 3	H. S. Lloyd, fees for use of hall	4 00	
	H. S. Lloyd, fees for D.R.O.	4 20	
	W. E. Frazer, fees as poll clerk	2 00	
July 29	A. E. Crewe, fees for use of booth	4 00	
	Dexter Crewe, fees as poll clerk	2 00	
			94 15

ROADS AND BRIDGES, GENERAL.

1915			
Feb. 2	Albert Reignew, half cost for tile for road	$35 00	
" 4	Wm. Graham, balance contract on bridge	25 00	
" 9	J. S. Richardson for cement for bridges	51 99	
" 11	Jas. Ross for hauling plank and repairing bridges	10 00	
	Noah Peltier, work and material for bridge	4 00	
" 24	Jas. Sams, for gravel	9 00	
Mar. 15	Hill Bros., for clay tile	2 80	
" 16	Wm. Rivard, for lowering tile	18 00	
" 17	Robt. Grant, for supplies for bridges	5 40	
" 24	Sam. Hamlin, repairing bridge railing	6 60	
" 26	Wm. Rivard, ditch, twp. share Patrick	15 00	
" 30	Thos. Johnston, hauling plank	8 00	
	John Michie, for relaying tile across the road	3 00	
Apr. 8	Fred. Trevastiss, for trap for tile	3 75	
" 9	D. Thibodeau, for repair bridge	2 50	
" 12	Wm. Rivard, for ditching	3 00	
" 26	Wm. Rivard, for repairing bridge	2 00	

1915		
Apr. 28	Fred. Smart, repairing tile	$5 50
" 30	Felix Dupius, for grading	7 00
May 4	Chas. Osborne, half cost Twp. share tile, 11 Concession	38 00
" 5	Hy. McGee, repairing culvert	2 00
	Geo. Clark, iron rods for bridges	4 00
	John Stevenson, Twp. share for tile on road	40 00
" 7	Hy. Lloyd, for repairing bridge	5 50
	A. E. Ray, for grading Tecumseh road	28 06
	Napoleon Tritrault, repairing bridge	7 00
" 11	Wm. Graham, for railing bridges	17 10
" 19	Kenneth Campbell, for painting bridges	8 75
" 20	Wm. Graham, repairing bridge	1 80
	W. Genoa, for tiling Twp. share road	21 87
" 25	Wm. Graham, for painting bridges	14 45
" 26	A. E. Ray, for cover and paint bridges	15 50
	Fred. Smart, for ditching	30 00
June 1	John Brent for drawing tile and lowering same	27 00
" 4	Wm. Graham, for railing and repairing bridges	27 95
	Herbert Sloan, paint for bridges	82 73
	John McHardy, for drawing gravel	18 00
" 5	James Conley, for drawing gravel	29 00
" 9	John Mitchie, for grading road	33 00
	Carl Grant, for repairing bridge	16 40
" 10	Chas. Tompkins, for drawing gravel	15 50
" 12	Park Bros., for steel beams	32 50
" 18	Whitney Hornick, trip to Chatham for steel	6 00
" 19	Timothy McNearney, for Twp. share, Smith Award.	21 00
	A. Cook, for drawing gravel	28 00
	W. J. Coutts, for hauling plank and steel	20 00
	John McLaren, ditching, Twp. share of Clarkson	22 77
	Wm. McK. Graham, for building bridge and material	153 75
" 21	James McMahon, repairing bridge and material	5 55
" 22	B. B. Smith, com. fees for Clarkson & Smith Award	7 00
	James Sams, for gravel	25 00
	Wm. Rooks, for repairing bridge	3 00
" 23	Hy. McGee, for lowering tile and ditching	15 75
" 25	R. J. Brown, for repairing bridge	4 50
	Wm. Sharp, for drawing tile and putting in	6 75
" 28	James Murphy, for repairing bridge	5 25
July 8	A. E. Ray, for repairing and grading bridge	9 00
" 9	Nelson Hornick, for drawing material for bridge	4 00
" 16	Wm. McK. Graham, building bridge and material	148 67
" 23	Park Bros., steel for bridges	259 07
" 24	J. S. Richardson, material for bridges	18 21
July 31	Amos Moe, ditching, Twp. share Davis Award	10 00
" 29	Hill Bros., for drain tile	51 00
" 28	W. Barr & Co., for cement for bridges	5 10
" 27	National Supply Co., for supplies	39 22
Aug. 4	Ad. Maillott, for painting bridges	8 25
	Ad. Maillott, for painting Jeannettes Cr. Bridge	130 00
" 7	Alfred Williams, repairing bridge	7 70
" 9	Carl Moe, for ditching, Twp. share Davis	10 00
" 11	Park Bros., steel for four bridges	435 82
" 12	C. Nicholson, for gravel	8 70
" 17	Ern Hope, for work on bridge	48 00
" 18	Ren Cox, for work on Davis Award	1 50
" 19	Carl Moe, for ditching on Davis Award	19 00
" 24	Grant Brown, repairing bridge	5 20
" 30	Jas. Pirie, for fencing road	8 00
Sept. 1	Cyrill Charron, for Twp. share tile, Con. 15	25 00
" 7	Fred. Smart, for balance work on new streets, Merlin	4 00
" 10	Job Tasker, work on bridge	13 50
" 14	Ern Hope, for work on bridges	88 00
	G. D. McPherson, for cement for bridges	88 40
" 15	Francis Trudell, for hauling tile	2 00
" 16	J. W. Robertson, freight on scraper	78

Sept.	23	Jerry Haskell, half cost Twp. share tile on road	$26 25
"	24	J. S. Richardson, for lumber	47 42
"	27	A. McLeod, ser. notice *re* Philips Dr.....	3 00
		C. Oulette, for putting in tile	7 00
"	29	Wm. Sharp, for drawing steel from Chatham.....	7 50
		Wm. Sloan, drawing steel from Chatham.....	7 50
"	30	A. W. McLeod, iron for bridges	2 00
		H. S. Lloyd, for work on bridges	245 00
		Stanley Smith, for drawing gravel	4 50
		Homer McMahon, for drawing gravel	9 00
		Wilbur Smith, for drawing gravel	9 00
Oct.	2	Sawyer-Massey, for repairs to grader	15 31
"	5	Wilbur Smith, drawing cement	2 25
"	7	Homer McMahon, drawing gravel	9 00
"	12	Wm. Rivard, drawing gravel	9 00
"	15	Zac. Sales, for repairing scraper	3 50
		Orvall Ketts, for repairing bridges	6 75
		W. A. Johnston, for cement for bridge	47 60
"	19	E. Edmunds, drawing cement	2 25
		M. J. McKinley, com. fees on bridges	9 00
"	29	Stanley Smith, for drawing steel and gravel.....	13 25
		Stanley Smith, for drawing gravel	4 50
		Geo. Ketts, for building road bridges	114 00
		B. B. Smith, com. fees on bridges, Duquette Drain	13 50
"	22	Paul Duquette, for ditch, Twp. share of Duquette Drain	35 00
"	28	Amos Moe, for Twp. share of Dupuis Award	5 00
"	29	J. S. Dawson, drawing gravel	4 20
		Henry Philips, for gravel and drawing	2 50
Nov.	1	W. A. Barr & Co., cement for bridges on roads...	138 87
"	3	John McFeggan, for drawing gravel	4 50
"	9	A. Dupuis, for repairing bridges	3 00
"	12	John Stroup, for gravel	15 25
		Geo. Hearns, for teaming tile and gravel	10 00
"	13	Wm. Brown, repairing bridge	2 50
"	16	Park Bros., steel for bridges	150 00
"	19	Stanley Smith, for putting in tile	13 00
"	22	August Brouletter, for filling holes in road	2 50
"	25	Job Tasker, for work done on road	4 50
"	26	Paul Tretreault, for ditching, 140 rods	81 25
"	27	C. W. Nicholson, for gravel on road	530 00
		Daulphice Thibert, for Twp., of tile on road	15 00
"	29	Carl Moe, for ditching, Twp. share of Dupuis Award	20 00
		Jas. H. Phelps, for gravel and drawing	81 00
"	30	Wm. McK. Graham, cement tile	29 70
		" " "	33 58
		" " "	18 80
		" " "	24 00
Dec.	1	J. S. Richardson, for plank	4 90
		F. Marchand, for teaming steel	5 00
		C. F. Oulette, for gravel got in 1914, by W. J. Coutts	21 00
"	6	Sol. Giroux, for hauling tile and putting in	7 00
"	7	Joseph Brown, for Twp. share of tile for road	26 00
"	8	J. S. Richardson, for plank for bridges	18 60
"	9	Alex. McNeill, for laying cement walks in Merlin.....	265 00
"	15	Jno. Milner, plank	4 70
		Thos. Johnson, grading road and fencing	70 00
"	17	Hy. Whittal, repair bridge	2 60
"	18	Jno. Wands, com. fees	15 00
		Jno. Brent, Twp. share of Smith Award	2 50
"	20	A. E. Ray, repair bridge	4 50
		Wm. Toomer, repair bridge	4 75
		W. H. Marshall, tile	20 00
"	21	H. Gardiner, tile	4 50
		Wm. McK. Graham, tile	25 24
"	22	Wm. McK. Graham, tile	10 08

1915				
Dec. 22	Wm. Graham, Junior, shust off tile		$3 75	
	Albert Hodgkins, Twp. share, Patrick Award		9 50	
" 24	Jos. Borden, hauling tile		16 50	
" 27	Chas. Case, tile for M.R.		63 55	
" 28	Wm. Taylor, repair bridge		2 00	
	M. McKinley, com. fees		21 00	
" 29	Lee Dawson, repair bridge		3 00	
	H. Jones, Twp. share, Barr Award		15 00	
" 30	Felix Dupuis, Twp. share tile		16 50	
Aug. 6	W. J. Taylor, ditching		33 05	
" 31	B. B. Smith, com. fees, Davis Award		4 00	
Dec. 23	Wm. McK. Graham, tile supplied		213 69	
Jan. 27	Jno. Dawson, gravel		7 20	
	Jno. Dawson, gravel		2 40	
" 16	Canada Ingot Company, pipe		265 00	
" 15	J. W. Smith, iron for bridges		2 00	
" 12	Park Bros., steel for bridges		18 60	
" 2	Noah Peltier, repair bridges		5 00	
	Wm. Graham, pipe		2 00	
" 11	Wm. J. Coutts, com. fees		64 00	
Apr. 19	G. D. McPherson, cement, Clossen Bridge		21 60	
				5,648 97

ROAD DIVISION No. 1.

1915.			
Jan. 21	Claude Reaume, refund on labor	$1 80	
Feb. 27	A. Vanostrand, for scraping road	7 00	
Mar. 15	John Feenan, for scraping	2 50	
" 22	James Ross, for scraping	4 50	
" 30	A. D. Ray, for scraping	12 60	
" 31	James McGregor, for scraping	8 00	
Apr. 1	W. Trudell, for scraping	6 00	
" 3	Clarence Taylor, for scraping	6 00	
	Wm. Turrel, for scraping	4 80	
	Frank Moore, for scraping	5 20	
" 9	Wm. Turrell, for burning brush	1 00	
" 12	P. A. McKinlay, for scraping roads	9 80	
" 19	Luther Shaw, for scraping roads	5 60	
" 20	Napoleon Tetrault, for scraping roads	4 00	
" 23	Walter Adams, for scraping roads	4 50	
	W. Faubert, refund labor	6 60	
" 28	F. Moore, filling holes in road	2 00	
" 29	W. J. Coutts, for scraping roads	8 00	
May 3	W. Adams, for scraping roads	4 00	
" 15	P. P. Farmer, com. fees as road overseer	18 50	
" 18	Grant Brown, for scraping	21 80	
	David Gardiner, for scraping	4 00	
" 19	W. J. McCord, for filling holes in road	3 00	
" 22	John Sinclair, for scraping	4 00	
" 26	Wm. Turrill, for scraping	4 00	
June 1	Wm. J. Coutts, for scraping	5 60	
" 4	A. Stenanson, for scraping	3 00	
	Wm. B. Answered, for scraping	4 00	
" 5	E. Case, for scraping	4 50	
" 8	James Ross, for scraping	8 80	
" 9	Carl Grant, for scraping	8 00	
" 12	John McGregor, for scraping	7 00	
	Julius Gurein, for scraping	6 00	
" 17	Thomas Aunslie, for scraping	3 80	
" 18	Everitt Case, for scraping	3 80	
" 19	W. J. Coutts, repairing bridge	4 00	
" 21	James Stark, for scraping road	8 00	
" 30	John Michie, for scraping road	4 00	
July 22	P. A. McKinlay, for scraping road	4 00	
Aug. 4	R. McCord, for scraping road	5 60	
" 6	W. J. Taylor, for ditching road	25 00	

Sept. 4	Julius Guruin, for scraping road	4 00	
	R. Nightemhelser, for scraping road	4 00	
" 10	W. J. Coutts, for scraping road	4 00	
" 14	M. Turrill, for filling holes on road	3 50	
" 15	W. Shaw, for scraping road	12 00	
" 20	P. A. McKinlay, for scraping road	8 00	
Oct. 7	David Gardiner, for scraping road	11 00	
" 12	Ralph McCord, for scraping road	4 40	
" 14	Alb. Stenanson, for scraping townline	6 00	
" 18	Ralph McCord, for scraping townline	4 40	
" 19	James Scott, for scraping townline	10 00	
	Joseph Forbes, for scraping townline	4 00	
	Walter Menard, for scraping townline	4 00	
" 28	James Simons, for scraping townline	4 00	
	Jas. A. Fletcher, for scraping townline	2 00	
Nov. 4	David Gardiner, for scraping townline	4 00	
Dec. 4	John Michie, for scraping townline	4 00	
" 6	Jas. McGregor, for repair bridge	1 00	
" 11	Jos. Sharp, for scraping	6 00	
" 14	P. A. McKinley, for scraping	6 00	
	Percy King, for scraping	4 00	
Jan. 14	M. J. McKinley, for scraping	17 00	
			391 60

ROAD DIVISION No. 2.

Feb. 9	Thos. Moffatt, refund of labor	$3 00	
Mar. 20	Stephen Finn, for scraping roads	9 00	
" 24	John Smith, for scraping roads	2 25	
" 26	Noah Peltier, for three loads cinders, Jeannettes Creek	3 00	
" 29	Simon Marloux, for scraping roads	2 25	
" 30	Albert Crosby, for scraping roads	18 00	
" 8	David Fletcher, repairing bridge	1 00	
" 19	Samuel Cooper, for scraping	12 00	
Apr. 27	D. A. Smith, work on 3 and 4 sideroad	4 00	
May 4	W. Larsh, for scraping	5 20	
	Ed. Stevenson, refund labor and repair bridge	5 70	
" 5	S. Mailloux, for scraping roads	5 20	
" 7	John Sinclair, for scraping roads	4 50	
" 10	Thos. Cooper, for scraping roads	4 50	
" 17	P. P. Farmer, com. fees for road overseer	11 00	
" 22	E. Taylor, for grading to bridge	1 50	
	David Ross, for scraping roads	4 00	
" 25	H. Beattice, for scraping roads	4 50	
June 4	Fred Heyd, for scraping roads	12 00	
" 10	Ed. Taylor, for cutting trees and bushes on road	7 50	
" 11	John Smith, for scraping roads	5 00	
" 12	Bert Cooper, for scraping roads	5 00	
" 14	David Ross, for scraping roads	6 00	
" 18	John Simard, for scraping roads	10 00	
" 21	Wm. Beattie, for scraping roads	4 00	
" 23	Ambrose Charron, for scraping roads	4 00	
" 29	E. Deolare, for scraping roads	9 00	
July 6	Jno. B. Simard, for scraping roads	4 00	
" 24	Thos. Cooper, for scraping roads	4 00	
Aug. 6	Harry Beattie, for scraping roads	2 00	
" 7	Alfred Williams, for scraping roads	2 00	
" 16	Stephen Finn, for scraping roads	4 00	
	A. Charron, for scraping roads	8 00	
" 28	John Smith, for scraping roads	8 00	
Sept. 7	Syl. Dauphin, for scraping roads	14 80	
	Peter Simard, for filling bridge	3 00	
" 9	Wm. Larsh, for scraping roads	8 00	
" 11	Harry Beattie, for scraping roads	2 00	
	Harry Williams, for scraping roads	2 00	
Oct. 1	Walter Adams, for scraping roads	8 00	

Oct.	2	Eli St. Jean, for scraping roads	$12 00	
		Paul Trudell, cutting weeds	2 00	
		Ovila Lefave, for scraping roads	5 40	
"	4	Ed. Stevenson, for scraping roads	12 00	
		Ovila Lefaive, for scraping roads	8 00	
"	5	Wm. Larsh, for scraping roads	10 00	
		T. B. Armstrong, for scraping roads	4 00	
"	14	A. McKay, filling holes and scraping	14 00	
"	15	Russell Cooper, for scraping	6 00	
"	23	J. H. Williams, for scraping	6 00	
"	26	Fred Feenan, for scraping	8 00	
"	27	Harry Beattie, for scraping	4 00	
"	29	Steve Finn, for scraping	4 00	
Nov.	2	Alex. Archibald, for scraping	8 00	
"	4	Robt. Fletcher, for grading to bridge	1 00	
"	5	Wm. Mancell, for scraping	8 00	
"	22	Jas. A. Fletcher, for scraping	3 00	
"	25	David Gardiner, for scraping	2 25	
Dec.	3	David Fletcher, for scraping	8 00	
"	9	Alfred Richie, for scraping	5 25	
"	24	Jno. Simard, for scraping	10 00	
"	30	Wm. Larsh, for scraping	8 20	
Jan.	2	Wm. Larsh, overseer of roads	5 00	
		Jno. Laidlaw, ditching	5 00	
				$392 00

ROAD DIVISION NO. 3.

1915				
Feb.	8	Hy. Magee, for statute labor refund	$1 80	
"	13	Wm. Carless, for cutting weeds	1 50	
Mar.	2	Thos. Brown, scraping roads	2 50	
"	15	John Brent, scraping roads	2 50	
"	16	Peter Stinger, scraping roads	2 00	
		Walter Cartwright, scraping roads	2 00	
"	18	Pearly Cottingham, repairing scraper	1 25	
"	19	Louis Phillips, for scraping	5 87	
		Wm. Rooks, for scraping	3 87	
		Leslie Bowman, for scraping	4 37	
"	20	Fay Dawson, for scraping	6 00	
"	22	August Brouletter, for scraping	4 00	
		Chas. Davidson, for scraping	2 00	
		Homer McMahon, for scraping	14 00	
		James Cook, for scraping	6 00	
		Geo. Struthers for scraping	6 00	
"	23	Nelson Hornick, for scraping	2 00	
		E. Maris, for scraping	6 00	
		J. McMahon, for scraping	2 00	
"	24	A. Book, for scraping	4 00	
"	25	Harley Squibb, for scraping	4 00	
"	26	Aclad Odette, for scraping	3 00	
		M. Mifflin, bits for scrapers	5 50	
"	27	W. Careless, for scraping	3 00	
		Wm. Walker, for scraping	1 00	
		Chas. Hartley, for scraping	2 00	
"	31	W. C. Crawford, for chain and bolts	3 00	
Apr.	3	A. W. Hodgkins, for scraping	2 00	
		W. E. Frazer, for making road drags	3 00	
"	6	John Copeman, for scraping	4 00	
"	7	Wm. Rivard, for ditching	4 00	
"	9	Jas. Swaney, for ditching	12 00	
		Wm. Rivard, for ditching	4 00	
"	16	Chas. Jacobs, scraping roads	4 00	
		John Hicks, scraping roads	4 00	
May	3	Allie Kemp, scraping roads	4 37	
"	21	Tim McNearney, scraping roads	5 20	
		Robert Burke, scraping roads	5 20	

May 25	Fred Trevastis, repair grader	$2 50
	Hy. Whittle, scraping roads	2 00
	Jas. Murphy, scraping roads	5 00
	John Stewart, scraping roads	5 00
	O. Wolfe, scraping roads	4 00
" 26	Dave Burgess, filling up to bridge	2 43
	Felix Dupuis, for scraping	8 00
	Orville Ketts, for scraping	4 00
	Wm. Taylor, for scraping	4 00
	Whitney Hornick, for scraping	4 00
June 1	Leslie Bowman, for scraping	2 60
	C. Lesperance, for scraping	4 00
" 2	Thos. Torrence, for scraping	4 00
	Robt. Chalice, for scraping	4 00
" 8	Wm. Toomer, for scraping	4 00
" 12	John McMahon, for scraping	2 60
" 14	Peter Stinger, for scraping	2 00
" 15	Robt. Hope, for scraping	4 00
" 16	Vic. Gardiner, for scraping	2 40
	Vic. Gardiner, for scraping	2 00
	August Broulette, ditching	18 40
" 17	Wm. Rovard, for scraping roads	2 00
	C. Cook, for scraping roads	4 00
" 18	Thos. Torrence, drawing tile and putting in same	12 90
	Thos. Hornick, for ditching	7 00
" 21	O. Wolfe, for repairing bridge	50
	W. Smith, for scraping roads	3 00
" 24	J. W. Hornick, for scraping roads	2 00
" 25	Vic. Gardiner, for scraping roads	2 00
" 28	Vic. Gardiner, for ditching	2 00
" 29	John Copeman, scraping	2 60
	A. W. Hodgkins, scraping	3 40
" 30	Chas. Davidson, scraping	2 00
July 1	Nelson Hornick, scraping	4 00
	Bert Cowan, scraping	4 00
" 6	Harry Squibb, scraping	5 00
" 10	H. Brousseau, scraping	4 00
" 9	P. Stinger, scraping	6 00
" 10	Vic. Gardiner, scraping	2 00
" 12	Dan. Phillips, scraping	4 00
" 13	Wm. Walker, scraping	2 00
	Orville Ketts, scraping	4 00
	Wm. Taylor, scraping	4 00
" 14	Jerry McMahon, scraping	6 00
	Joseph Donais, scraping	4 00
" 20	Robt. Burke, for ditching	4 50
	Wm. Rooks, for ditching	4 50
	Wm. Rooks, for scraping	2 00
	J. Kelly, holding scraper	2 50
	Stanley Smith, for ditching	7 00
" 21	Wm. Blair, for scraping	5 00
	Awrey Hicks, for ditching	4 50
	D. Bowman, for ditching	7 00
" 23	E. E. Mavis, for ditching	22 00
	Vic. Gardiner, for ditching	9 00
Aug. 5	Whitney Hornick, for scraping	3 00
" 7	Tim McNearney, for grading	2 00
" 14	Stanley Smith, for cutting weeds	2 00
" 18	Ren. Cox, for filling in road	50
Sept. 3	Peter Stinger, for scraping	2 00
" 7	T. J. McMahon, for ditching and tiling	18 55
" 9	Henry Davidson, fill up to bridge	2 00
" 14	David Burgess, for scraping	8 00
" 16	Jerry McMahon, for scraping	2 00
Oct. 8	Edward Davidson, for scraping	2 60
	Ira Burgess, for scraping	3 00

1915				
Oct. 12	Wm. Rivard, for scraping		$2 00	
	Hilare Thibert, for scraping		8 00	
" 18	Jerry McMahon, repairing bridge		1 00	
" 20	Harley Squibb, for lowering tile and cutting weeds.		4 50	
" 22	James Sams, for gravel		90	
Dec. 9	Peter Stinger, filling holes in road		1 25	
" 10	Wm. Cook, for scraping		2 00	
" 13	Merritt Smith, scraping		2 25	
" 14	Thos. Hornick, cutting weeds		4 00	
" 15	Leslie Bowman, repairing bridge		1 00	
" 17	Leslie Bowman, scraping		2 25	
" 31	Roy Dawson, scraping		2 00	
Jan. 5	Thos. Hornick, refund statute labor		6 00	
" 2	Alf. Hornick, refund statute labor		8 40	
" 5	Thos. McMahon, refund statute labor		4 80	
" 2	H. Squibb, cutting weeds		2 00	
				502 26

ROAD DIVISION NO. 4.

Jan. 11	Arthur Tremblay, refund of labor	$1 80	
" 18	Andrew Cook, refund of labor	1 80	
" 19	Earl Coffell, refund of labor	1 80	
" 14	Theo. Burgess, balance refund	20	
Feb. 8	Stanley Robinson, taxes charged in error	60	
" 12	Alex. Dupuis, for putting in tile	10 00	
" 15	P. G. Ludwig, refund labor	13 80	
" 25	Jerry Haskell, refund labor	5 60	
Mar. 15	John Feenan, for scraping	2 50	
" 22	Dalphice Thibert, for scraping	4 00	
" 26	Chas. Shivas, repair to road ditch (ditch crossed by Gas Company)	16 00	
" 27	Earl Coffell, scraping	17 50	
" 30	Thos. Tasker, repairing roads	1 80	
	David Gardiner, scraping	6 00	
" 31	Jos. Sharp, scraping	6 00	
	Geo. Struthers, scraping	5 00	
Apr. 3	Ev. Atkinson, scraping	3 00	
" 6	P. McCord, scraping	4 00	
" 7	P. G. Ludwig, for scraping and refund	8 00	
	Thos. Tasker, for refund labor	4 00	
	Chas. Davidson, scraping	4 00	
	Garnet Hornick, for scraping	4 00	
" 8	Jos. Haskell, for scraping	4 00	
	Brodie Gardiner, for scraping	4 00	
" 16	Chris. Armstrong, refund of labor	6 00	
	Hy. Sales, for scraping	4 02	
May 8	Isaac Smith, for repair bridge	1 50	
" 18	D. Gardiner, for scraping	8 00	
" 26	Alex. Robertson, for refund of labor	4 80	
June 15	Reg. Gardiner, for scraping	4 00	
" 23	Hy. Sales, for scraping	4 00	
" 25	John Struthers, for scraping	4 00	
	Manly Ellis, for scraping	9 00	
Aug. 23	Victor Gardiner, for ditching	5 00	
" 24	William Sloan, for scraping	20 00	
" 25	Victor Gardiner, for ditching	5 00	
	Victor Gardiner, for ditching	15 00	
	Alex. Nead, for cutting brush	15 00	
" 31	Fred Trevastis, for ditching	12 00	
Sept. 3	Carl Moe, for ditching	15 00	
" 7	Victor Gardiner, for ditching	14 30	
" 13	Stanley Smith, for ditching	5 00	
" 20	Alex. Nead, for cutting weeds and repairing road....	12 00	
Oct. 14	Amos Moe, for ditching, 11th Con.	2 50	
" 27	Jerry Haskell, for scraping	32 00	

1915			
Nov. 4	D. Gardiner, for scraping	4 00	
" 10	Andrew Barnier, for ditching and scraping	38 00	
" 13	Joseph Haskell, for scraping	4 00	
" 17	Carl Moe, for scraping	12 00	
	Joseph Sharp, for scraping	6 00	
" 20	Norman Brown, for scraping	4 00	
" 22	Manly Ellis, for scraping	13 00	
" 26	Gordon Brown, for scraping	4 00	
" 27	Henry Sales, for ditching	3 60	
" 30	Wm. McK. Graham, cement tile	11 52	
Dec. 22	Robt. Fletcher, scraping	4 80	
Jan. 14	Hy. Burgess, refund of statute labor	1 00	
			433 44

ROAD DIVISION NO. 5.

Jan. 20	Fred Smart, for work on road	$3 50	
	Joseph Dawson, for work on road	1 60	
	John Randall, for work on road	1 60	
Feb. 18	Isaac Brown, grading	1 50	
Mar. 26	John Charlton, scraping	4 00	
" 30	Chas. Tompkins, trip for grader	1 25	
	Chas. Tompkins, scraping	3 75	
	Edward Carr, scraping	6 00	
	John Hope, scraping	6 00	
	James Sams, scraping	15 00	
" 31	E. C. Jones, scraping	4 00	
" 31	Lorraine Jones, scraping	7 00	
Apr. 1	H. S. Lloyd, scraping	6 00	
" 3	Vernie Jones, scraping	7 00	
" 29	Fred Smart, scraping	8 00	
May 11	Dyer Doyle, scraping	16 00	
" 19	Wm. Howe, scraping	8 00	
" 25	Dyer Doyle, scraping	8 00	
" 26	J. D. Johnston, for repairing bridge	2 50	
	James Sams, scraping	14 00	
" 29	Isaac Smith, holding scraper	1 40	
June 5	Wm. Barr, refund of labor	6 60	
	Robt. Johnson, for scraping	5 00	
" 8	James Sams, for gravel	60 00	
" 9	Walter Irwin, scraping	8 00	
	M. Kidd, scraping	2 00	
" 10	M. Tompkins, scraping	4 00	
" 11	D. Mifflin, scraping	4 00	
	Robt. Jones, scraping	8 00	
	Fred. Smart, scraping	18 00	
" 17	Samuel Pook, scraping	8 00	
" 19	M. Johnson, scraping	2 80	
	Andrew Cook, scraping	2 80	
	Earl Coffell, scraping	2 80	
June 24	John E. Armstrong, for scraping roads	8 00	
" 25	K. J. Brown, for repairing bridge	12 00	
July 6	D. Mifflin, scraping	7 00	
	Fred Smart, scraping	4 00	
" 9	Charles Tompkins, scraping	4 00	
" 24	Jas. Sams, gravel	25 00	
Aug. 3	M. Kidd, scraping	4 00	
" 7	Hy. S. Lloyd, scraping	8 00	
" 26	Jas. Sams, gravel	25 00	
Sept. 1	Bert Hardy, work on road	15 00	
" 7	James Sams, gravel for road	50 00	
" 25	Union Gas Company, teaming for road	6 00	
Oct. 15	Isaac Brown, for scraping	12 00	
" 30	Jas. Conley, for scraping	8 00	
Nov. 7	Jas. Sams, for going for grader and plowing	3 00	
" 30	Jas. Sams, for gravel for Lake Shore Road	325 50	

1915			
Nov. 8	Richard Peters, scraping	$6 00	
" 9	Walter Irwin, scraping	8 00	
" 22	Manley Ellis, scraping	9 00	
" 27	C. W. Nicholson, for gravel and scraping	22 30	
Dec. 1	Bert Hardy, drawing gravel	25 50	
" 17	Ed. Armstrong, work on road	3 00	
" 28	Dyer Doyle, repair on road	2 00	
Jan. 15	James Smith, refund of statute labor	11 40	
" 5	Walter Irwin, refund of statute labor	4 80	
" 5	Jno. Armstrong, refund of statute labor	4 20	
" 11	Jno. Randall, ditching	4 75	
" 5	Jno. Hope, ditching	15 00	
" 15	Zacharis Sales, repair scraper	1 00	
			$891 55

RALEIGH AND TILBURY EAST TOWNLINE.

Apr. 16	Raleigh Township, for half cost expenses on Townline Jeannettes	$160 62	
May 4	Wm. Larsh, for scraping	80	
" 5	S. Mailloux, for scraping	80	
" 12	J. S. Richardson, for plank and posts	16 14	
" 14	Geo. Mancell, for scraping	26 00	
June 11	John Smith, for scraping	6 50	
" 12	Bert Cooper, for scraping	6 50	
July 13	M. Gleason, for scraping	8 00	
" 20	Geo. Laidlaw, for scraping	8 00	
Oct. 4	Ed. Stevenson, for scraping	19 00	
" 15	A. McRay, for scraping	8 00	
Nov. 5	Wm. Mancell, for scraping	22 00	
" 15	Michael Gleason, for scraping	13 00	
	James Laidlaw, for scraping	4 00	
			299 36

ROMNEY TOWNLINE.

June 25	Manly Ellis, for scraping	$7 00	
Aug. 27	Alex. Nead, for cutting brush	15 00	
Oct. 28	John Charlton, for scraping	4 00	
Nov. 3	James Sams, for gravel	17 50	
Dec. 31	Rich. Clarkson, for provision for tiles for draining..	26 00	
			69 50

TILBURY E. AND TILBURY N. TOWNLINE ACCOUNTS.

July 24	J. S. Richardson, supplies	$4 03	
			4 03

CHARITY.

Jan. 16	F. I. Reid, services *re* Emma Thibert	$10 00	
" 20	Hospital for Sick Children for grant	10 00	
Mar. 12	Moses Mifflin, board for patients quarantined	40 00	
" 23	F. H. McColl, payment of services, Crew family	7 00	
" 25	C. Halfeish, for keep of Geo. Greives	47 60	
Apr. 3	Azelin St. Jean, for taking Peter Navillo to House of Refuge	3 95	
" 30	D. S. Patterson, aid to Children's Aid Society	10 00	
June 29	A. W. Hodgkins, to keep of Mrs. Grey	22 00	
July 5	Public General Hospital, services D. Grieves	37 00	
" 19	Dr. McCall, services to Underwood's family	25 00	
Aug. 31	A. W. McLeod, taking John Kemble to House of Refuge	3 75	
Sept. 10	Muskoka Free Hospital, care of D. Grieves	19 05	
" 25	St. Joseph's Hospital, care of I. Purdy	14 00	
Dec. 20	F. H. McColl, services	8 00	
	J. C. Bell, services Mrs. Gus Smith	50 00	
Jan. 14	St. Joseph's Hospital, care of I. Purdy	39 00	
			346 35

County Rates.

1915			
Feb. 19	J. C. Fleming, county rate, 1914	$3,074 69	
" 9	J. C. Fleming, interest on rate, 1914	17 69	
			3,092 38

Patriotic Fund.

Feb. 9	Canadian Red Cross, grant	$500 00	
" 11	Ch. Rochereau, Belgian Consul	500 00	
			1,000 00

School Rates.

Jan. 2	Wm. Larsh, 1914, in full, U. No. 1	$390 00	
" 5	Thos. Jones, in full, balance, P. No. 4	400 57	
" 12	Wm. J. Coutts, 1914, in full, balance, P. No. 2	1,396 29	
" 14	J. A. Tremblay, 1914, in full, balance, Sep. No. 1	353 92	
	Hy. Atkinson, 1914, in full, balance, P. No. 6	857 88	
	Jas. Foster, 1914, in full, Tilbury, P.U. No. 13	264 15	
" 15	Thos. Brown, 1914, in full, P. No. 5	1,350 68	
	W. H. Shaw, 1914, in full, P. No. 7	752 18	
" 16	Julus Duquette, 1914, in full, U. Sep. No. 7, Tilbury N.	36 60	
	David Duquette, 1914, in full, U. Sep. 6, Tilbury N.	72 20	
" 19	Mrs. J. N. Halliday, 1914, Merlin, U. No. 5	840 50	
	Wm. A. Dillon, 1914, Merlin, Raleigh, Sep. No. 6	121 27	
	H. Lloyd, 1914, balance, P. No. 8	156 56	
	Treasurer of Raleigh, share of debenture, U. No. 5, Merlin	234 79	
" 28	Chas. Tompkins, 1914, in full, U.P. No. 2	486 69	
Feb. 8	Coll. of taxes, refund of rates, U. No. 5, Merlin	5 49	
Mar. 29	D. Fletcher, 1914, balance, P. No. 3	464 40	
June 30	D. Fletcher, 1915, part, P. No. 3	1,000 00	
July 1	W. H. Shaw, loan, P. No. 7	500 00	
" 5	Jno. B. Simard, 1915, part, Sep. No. 3	200 00	
" 24	W. H. Shaw, loan, P. No. 7	500 00	
Aug. 6	W. H. Shaw, loan, P. No. 7	500 00	
" 28	Hy. Atkinson, 1915, part, P. No. 6	400 00	
" 31	W. J. Coutts, loan, P. No. 2	1,000 00	
Sept. 22	W. H. Shaw, loan, P. No. 7	500 00	
Oct. 2	D. Fletcher, account 1915, loan, P. No. 3	400 00	
" 8	W. J. Coutts, account 1915, loan, P. No. 2	1,700 00	
" 27	W. H. Shaw, balance of loan, P. No. 7	2,000 00	
Nov. 2	Reg. of Kent, registering by-law, P. No. 2	2 04	
	Reg. of Kent, registering by-law P. No. 7	2 03	
Dec. 16	W. J. Coutts, loan, P. No. 2	500 00	
" 21	D. Fletcher, account 1915, P. No. 3	600 00	
	W. H. Shaw, account 1915, P. No. 7	300 00	
" 22	H. S. Lloyd, account 1915, P. No. 8	300 00	
	H. Atkinson, account 1915, P. No. 6	200 00	
" 24	Jno. B. Simard, 1915, in full, Sep. No. 3	407 00	
	Thos. Jones, 1915, in part, P. No. 4	300 00	
			19,495 24

School Grants.

Aug. 30	D. Fletcher, Legislative grant, S.S. No. 3	$180 00	
Sept. 9	Thos. Jones, Legislative grant, S.S. No. 4	41 00	
" 10	Wm. J. Coutts, Legislative grant, S.S. No. 2	112 50	
" 11	Thos. Brown, Legislative grant, S.S. No. 5	90 00	
" 13	W. A. Shaw, Legislative grant, S.S. No. 7	55 00	
" 14	Wm. Larsh, Legislative grant, Union No. 1	65 00	
" 18	H. S. Lloyd, Legislative grant, S.S. No. 8	55 00	
	Hy. Atkinson, Legislative grant, S.S. No. 6	80 00	
" 29	Chas. Tompkins, Legislative grant, Union No. 2	55 00	
Dec. 21	D. Fletcher, Government grant, S.S. No. 3	73 06	
	W. H. Shaw, Government grant, S.S. No. 7	26 08	

1915			
Dec. 22	H. S. Lloyd, Government grant, S.S. No. 8	$26 84	
	Hy. Atkinson, Government grant, S.S. No. 6	37 06	
	Thos. Brown, Government grant, S.S. No. 5	39 30	
	Chas. Tompkins, Government grant, U.S.S. No. 2	18 30	
" 24	Thos. Jones, Government grant, S.S. No. 4	21 24	
" 30	Wm. Larch, Government grant, U.S.S. No. 1	23 00	
Jan. 7	Chas. Tompkins, U.S.S. No. 2	20 36	
	Hy. Atkinson, S.S. No. 6	39 94	
			$1,058 68

INTEREST.

Jan. 30	Merchants Bank, interest on overdraft	$21 15	
Sept. 30	" " " "	7 75	
Dec. 31	" " " "	34 40	
			63 30

BOARD OF HEALTH.

Apr. 27	J. W. Coutts, attendance three meetings, 1914	$7 50	
" 29	Dr. M. Sharp, attendance three meetings, 1914	15 00	
May 4	Dr. F. I. Reid, disinfecting Pt. Alma	14 00	
" 5	Dr. J. C. Bell, *re* Chas. Thibault family	5 00	
	Dr. J. C. Bell, disinfecting and quarantining	34 00	
" 14	Alexander Farquharson, services at meetings	7 50	
	Jas. W. Smith, services at meetings	7 50	
Aug. 27	Dr. M. Sharp, to Peterboro, *re* Provincial Board of Health	27 00	
Sept. 29	Dr. F. I. Reid, disinfecting Wilson and Sinclair house	14 00	
Nov. 24	Dr. M. Sharp, salary as M.H.O., and professional services	52 00	
" 24	Jas. W. Smith, attending 2 meetings Board of Health	5 00	
	John F. Fletcher, attending 3 meetings Board of Health	7 50	
Dec. 18	J. C. Bell, quarantine Branton, and disinfecting	9 00	
" 20	F. H. McColl, supplies	7 00	
" 27	Dr. Reid, *re* Coutts and Stevenson	14 00	
			226 00

DEBENTURES AND COUPONS.

Feb. 5	No. 1, Government outlet of 1896	$935 88	
" 16	No. 1 and 2, Government outlet 3 of 1900	396 08	
Mar. 3	No. 2 and 3, Government outlet 5 of 1900	1,828 32	
Feb. 6	Forbes repair, 1903	819 96	
" 8	McDougal outlet 3 of 1905	204 97	
	No. 1 and McDougal outlet 4 of 1905	755 81	
	McKin drain 6 of 1905	97 43	
	6 L.E. & D.R.R. 4 of 1890	325 26	
Jan. 7	Wilson drain	90 78	
Feb. 15	Askin drain 15 of 1907	144 13	
June 16	King & Whittle drain 12 of 1909	1,146 51	
Feb. 1	Malott division 7 of 1909	224 08	
	No. 2 and 3 Government 7 of 1900	1,345 79	
	Driver drain 10 of 1909	106 28	
Jan. 16	Pike & Dauphin Imp. 15 of 1910	1,053 82	
	Burgess & Careless 19 of 1910	881 03	
	Moffatt drain 25 of 1910	195 40	
Feb. 1	Moffatt drain Ex. 26 of 1910	130 95	
	Forbes repair 17 of 1910	1,265 89	
Jan. 20	Peltier drain 18 of 1910	58 44	
" 29	Powell drain 27 of 1910	106 83	
Feb. 1	Eight Creek 10 of 1911	442 37	
	David drain 15 of 1911	173 92	
	Chalmers No. 2	155 91	
" 20	No. 1, Government drain 19 of 1912	891 99	
Mar. 8	Finn & Cooper	648 21	
Dec. 31	Farmers D. Works	670 31	
			15,096 35

Dauphin Special Debenture Account.

1915			
Jan. 5	2 coupons—$47.90, $36.69	$84 59	
" 7	2 coupons—$47.89, $36.69	84 58	
" 23	1 coupon	47 90	
June 25	1 coupon	36 69	
" 26	2 coupons	95 78	
" 28	11 coupons	761 90	
" 28	Debenture	1,073 00	
	1 coupon	47 89	
	1 coupon	36 69	
" 30	1 coupon	36 69	
July 5	1 coupon	36 69	
" 7	1 coupon	47 89	
" 10	1 coupon	47 89	
Dec. 24	1 coupon	36 71	
" 28	1 coupon	36 71	
	1 coupon	47 92	
			2,559 52

Forbes Special Debenture Account.

Jan. 30	Debenture	$1,127 00	
	1 coupon	56 35	
Feb. 27	9 coupons	529 75	
" 4	1 coupon	50 00	
" 8	1 coupon	63 60	
			1,826 70

Tile Drainage Coupons.

Feb. 26	Coupons 5 to 82—78 × $7.36	$574 08	
	Coupons 372 to 375—4 × $7.36	29 44	
Mar. 8	Coupons—4 × $7.36	29 44	
Aug. 1	Coupons 5 to 45—41 × $7.36	301 76	
" 1	Coupons 51 to 82—32 × $7.36	235 52	
" 9	Coupons 83 to 250—168 × $12.95	2,175 60	
			3,345 84

Tile Drainage Loans.

Feb. 4	Thos. Jones	$600 00
" 6	Stanley Patterson	1,000 00
	Jeffry Lebouef	800 00
" 8	B. F. Synder	500 00
	Sahara Paulius	297 50
	Rich. Careless	997 50
" 9	J. A. Fletcher	300 00
" 11	T. B. Armstrong	598 75
" 20	Jno. Atkinson	197 50
Mar. 31	Wm. Walker	500 00
May 4	Chas. Osborne	397 50
June 1	J. A. Fletcher	397 50
" 2	P. C. Stevenson	397 50
" 12	Wm. Renwick	397 50
" 18	W. J. Taylor, part	897 50
July 8	P. G. Ludwig	997 50
" 9	Geo. Walker	397 50
" 14	Jno. Philips	997 50
Aug. 4	Albert Davidson	497 50
" 6	W. J. Taylor, balance	100 00
" 7	James McGregor	397 50
Sept. 9	Cyrille Charron	197 15
" 10	J. C. McGregor	397 50
" 15	T. B. Armstrong	397 50
Oct. 21	H. S. Lloyd, part	300 00
Nov. 5	H. S. Lloyd, balance	397 50

Oct. 23	Thos. Tasker, part	297 50	
Nov. 8	Thames Valley Garden Land Company	500 00	
Dec. 21	Thames Valley Garden Land Company	165 30	
" 2	Robt. Hope	997 50	
	Nelson Hope	597 50	
	Hy. W. Sales	597 50	
	Jos. Brown	997 50	
" 4	Jno. Copeman	397 50	
" 6	E. C. Knister	597 50	
" 15	Harley Squibb	497 50	
" 17	Sam Brown	797 50	
" 18	Elmer Hornick	997 50	
" 21	James Stacey	497 50	
" 22	Wm. Walker	497 50	
	Alex. Jubenville	997 50	
" 27	Jno. McHardy	397 50	
Jan. 23	Jno. Ferguson	500 00	
" 2	Geo. Mancell	1,000 00	
			24,686 20

TILE DRAINAGE INSPECTION.

Mar. 4	D. Fletcher, Jones Loan	$2 50	
" 2	" Mrs. Sahara Paulus	2 50	
June 10	" W. R. Walker	2 50	
	" P. G. Ludwig	2 50	
	" J. A. Fletcher	2 50	
	" Chas. Osborne	2 50	
Aug. 9	" W. Taylor	2 50	
	" P. Stevenson	2 50	
	" W. Renwick	2 50	
	" Geo. Walker	2 50	
	" J. Philips	2 50	
	" J. E. McGregor	2 50	
	" A. Davidson	2 50	
Oct. 6	" T. B. Armstrong	2 50	
	" Mr. Stacey	2 50	
	" A. Jubenville	2 50	
	" J. C. McGregor	2 50	
	" J. McArdy	2 50	
	" T. G. L. Co.	2 50	
Nov. 5	" Thos. Tasker	2 50	
	" H. Lloyd	2 50	
	" J. Copeman	2 50	
	" W. Hope	2 50	
	" Hy. Sales	2 50	
	" Hy. Squibb	2 50	
Jan. 13	" M. B. Armstrong	2 50	
	" J. B. Atkinson	2 50	
			$67 50

RECAPITULATION OF DRAINS.

Askew Drain, tributaries 1 and 2	$721 00
Big Creek Drain, Tilbury N.	471 50
Badder Drain	2 00
Burgess & Careless	79 60
Campbell, repair, 1915	544 00
Closson	1 60
Coutts	199 00
Cook	14 00
Chalmers No. 1	115 00
Davidson	16 00
Dauphin D. Works	934 11
Dauphin D. Works, Imp., 1915	3,543 93
Farmers' D. Works	398 45
Forbes D. Works, 1 and 2	1,620 03

Gore A and B, Romney		150 00	
Henisberger South		282 00	
Hickey		1,165 75	
Johnston		38 00	
Kennedy		42 50	
Kelly		19 20	
King & Whittle		223 67	
Malott, repairs, 1915		114 00	
Moffatt Extension		158 98	
McLeod Extension		69 00	
McDougall, repairs		151 27	
McKin West		138 00	
McIntosh		18 00	
McGregor D. Works		251 04	
No. 1 Government		1,104 14	
No. 1 Government and McDougall outlet		20 10	
Nos. 2 and 3 Government		129 60	
No. 3 Government		1,552 45	
Old		66 00	
Philips		223 60	
Powell, repairs, 1915		541 70	
Pike and Dauphin Imp. Works		73 04	
Raleigh No. 2 Bridge		306 67	
Ross & Norry		248 25	
Shepley		29 75	
W. J. Taylor, D. Works of 1915		326 08	
10th Con., Nos. 1 and 2		2 00	
10th Con., Nos. 3 and 4		2 00	
12 and 13 Sideroad		59 00	
Wands		289 90	
			16,455 91

ASKEW DRAIN, TRIBUTARIES 1 AND 2.

Jan. 15	Jno. Wands, survey	$4 00	
June 12	Jas. Guy, ditching	50 00	
July 1	Jas. Guy, ditching	135 00	
" 5	Reg. of Kent, registering by-law	2 00	
Aug. 7	Jas. Guy, ditching	47 00	
Oct. 15	Wm. Guy, ditching	100 00	
Nov. 12	Wm. Guy, ditching	150 00	
" 22	Wm. Guy, ditching	107 00	
" 29	Jas. Guy, ditching	57 00	
Dec. 1	Jno. Coffell, damages	12 50	
" 4	Louis Simpson, damages	12 50	
	Strauss Land Company, damages	13 00	
" 15	John Nicholson, damages	13 00	
" 27	John Wands, com.	10 00	
Jan. 2	Alex. Farquharson, prep. by-law	8 00	
			721 00

BIG CREEK DRAIN, TILBURY NORTH.

Aug. 5	Kerr & McNevin, services	$25 00	
Sept. 14	Twp. of Tilbury N., assessment	406 50	
Dec. 22	Kerr & McNevin, services	25 00	
Jan. 2	Alex. Farquharson, prep. by-law	15 00	
			471 50

BADDER DRAIN.

July 5	Registrar of Kent, registering by-law	$2 00	
			2 00

BURGESS AND CARELESS DRAIN.

Sept. 7	T. J. McMahon, ditching	$9 10	
Dec. 7	A. J. Ricker, ditching	45 00	
	Robt. Chalice, board of men	13 50	
" 17	Robt. Chalice, board of men, and work	12 00	
			79 60

Campbell Repair, 1915.

1915			
July 26	C. R. McColl, report, plans, etc.	$53 00	
Aug. 28	C. R. McColl, reconsideration of plans	16 00	
Nov. 22	Wellington Wallace, ditching	100 00	
Dec. 18	Wellington Wallace, ditching	150 00	
" 20	Jno. Laidlaw, ditching	175 00	
Nov. 22	Jno. Laidlaw, ditching	50 00	
			544 00

Closson Drain.

Dec. 8	G. D. McPherson, plank	$1 60	
			1 60

Coutts Drain.

Aug. 28	J. J. Newman, report and plans	$39 00	
Nov. 11	H. Hallett, tile delivered	150 00	
Dec. 13	W. J. Coutts, work	10 00	
			199 00

Cook Drain.

Sept. 20	McColl & Fletcher, report and plans	$14 00	
			14 00

Chalmers Drain No. 1.

Nov. 3	Jos. Albretch, ditching	$100 00	
Jan. 14	Hy. Atkinson, com. fees	15 00	
			115 00

Davidson Drain.

July 5	Registrar of Kent, registering by-law	$2 00	
Jan. 2	Alex. Farquharson, prep. by-law	14 00	
			16 00

Dauphin Drainage Works.

Feb. 3	Jos. Larsh, com. fees	$5 00	
Mar. 10	Jno. Labute, work and pumping	14 75	
" 11	Peter Labute, work	35 00	
" 16	Jerry Kindale, work and repair	6 95	
	Jerry Kindale, pumping	15 00	
" 23	Union Gas Company, gas	58 50	
" 26	W. W. Scane, oil and supplies	10 75	
	A. H. Rozell, supplies	3 45	
Apr. 1	Peter Labute, pumping	38 50	
" 6	Jos. Larsh, inspection	1 25	
	Jos. Larsh, damage	35 00	
" 8	Park Bros., repairs	254 43	
" 13	Frank Marchand, cutting weeds	10 00	
" 20	Wm. Larsh, one load sand	2 50	
" 21	Simon Mallion, brick	5 00	
	Union Gas Company, gas	29 25	
" 22	H. Kinsville, pumping	9 50	
	P. Farmer, com. fees	30 25	
" 23	C. Sharron, brick	5 00	
" 26	Park Bros., brick supplies	61 60	
May 7	H. Callwood, insurance	36 00	
" 19	Jos. Larsh, planting willows	7 00	
" 27	A. Rozell, damages	35 00	
June 9	Jerry Kinville, pumping	7 50	
" 17	Peter Labute, pumping	7 50	
" 18	Paul Trudell, level banks	10 00	
" 21	W. J. Coutts, Court of Revision	2 00	

1915			
Aug. 9	Sy. Dauphin, tools and trips	10 00	
" 17	Union Gas Company, gas	21 90	
" 20	Jerry Kinville, pumping	10 00	
" 30	*Daily News*, tenders	4 48	
Sept. 27	A. H. Rozell, locks	1 30	
Oct. 14	Jerry Kinville, pumping	5 80	
	Peter Labute, pumping	25 00	
	W. W. Scane, supplies	6 50	
Nov. 25	Jerry Kinville, pumping	8 75	
Dec. 22	Union Gas Company, gas	59 70	
" 23	Jno. F. Fletcher, com. fees	44 00	
			934 11

DAUPHIN DRAINAGE WORKS IMP. OF 1915.

May 8	J. J. Newman, report and plans	$54 00	
Nov. 2	Registrar of Kent, registering by-law	2 00	
" 12	Geo. Kearns, teaming tile and putting in	31 00	
" 24	Sy. Dauphin, teaming steel and putting in	8 00	
" 16	Park Bros., teaming steel and putting in	331 64	
" 30	Wm. McK. Graham, tile	34 56	
Dec. 3	Frank Marchand, drawing steel	4 75	
	Lake Side Dredging Company, on account	1,000 00	
" 17	Lake Side Dredging Company, on account	500 00	
" 23	Lake Side Dredging Company, on account	1,500 00	
" 3	G. D. McPherson, plank	77 98	
			3,543 93

FARMERS' DRAINAGE WORKS.

Feb. 1	Park Bros., balance of construction	$146 00	
	Park Bros., supplies	95	
	Park Bros., cement and gravel	29 00	
Mar. 24	Union Gas Company, gas	15 00	
" 27	Park Bros., repairs	25 93	
Apr. 21	Union Gas Company, gas	9 15	
" 24	P. Farmer, com.	25 00	
" 26	Park Bros., material	8 55	
May 15	Union Gas Co., gas	3 75	
" 17	P. Farmer, com.	12 42	
" 18	Geo. Rocz, pumping	8 75	
June 14	Geo. Rocz, pumping	26 50	
July 20	Jos. Lozon, pumping	10 00	
Aug. 17	Union Gas Company, gas	23 85	
" 18	Park Bros., repairs	9 80	
	Park Bros., repairs	12 90	
Sept. 25	Union Gas Company, gas	9 30	
Oct. 27	Union Gas Company, gas	7 35	
Nov. 22	Union Gas Company, gas	4 50	
" 16	Jos. Lozon, pumping	7 65	
Dec. 22	Union Gas Company, gas	2 10	
			$398 45

FORBES DRAINAGE WORKS, 1 AND 2.

Jan. 1	Park Bros., cement and gravel	$5 25
Mar. 16	A. E. Garbutt, 245 hours pumping	73 50
" 19	L. A. Soubritze, 213 hours pumping	54 75
" 24	Union Gas Company, gas for February	224 37
	Union Gas Company, gas for November, 1914	3 60
" 26	A. E. Garbutt, 40 hours pumping	12 25
	W. Scane, oil and supplies	10 50
" 30	F. G. Soubritze, repair pumps	7 00
" 31	L. A. Soubritze, work on pumps	39 25
" 8	Chas. Ouellette, pumping	28 25
	Jas. Pickle, pumping	21 25

1915			
Apr. 8	Park Bros., repairs and supplies	332 18	
" 21	Union Gas Company, gas	57 75	
" 22	P. Farmer, com. fees	54 40	
" 24	McKeough and Trotter, hose, etc.	31 35	
" 27	H. Callwood, insurance	72 00	
" 28	A. H. Rozell, oil and supplies	6 70	
	A. H. Rozell, oil and supplies, No. 1	5 50	
May 7	A. E. Garbutt, work	24 30	
" 11	Jas. Pickle, work, No. 1	5 00	
" 13	H. Sloan, supplies	16 83	
" 14	A. E. Garbutt, pumping	7 80	
" 18	L. A. Soubritze, pumping, No. 2	21 25	
" 29	A. E. Garbutt, work, No. 1	13 20	
June 4	H. Sloan, oil and repairs	9 40	
" 22	McKeough & Trotter, repairs	9 30	
July 1	A. E. Garbutt, pumping	11 40	
" 13	A. E. Garbutt, pumping	5 40	
" 28	A. E. Garbutt, pumping	10 20	
Aug. 13	L. A. Soubritze, pumping	17 00	
" 17	Union Gas Company, gas	234 45	
" 23	A. E. Garbutt, work	24 00	
Sept. 20	Jos. Lozon, pumping	18 00	
" 22	A. E. Garbutt, work, No. 1	24 60	
Oct. 19	A. E. Garbutt, pumping	12 90	
" 27	Union Gas Company, gas	22 95	
Nov. 22	Union Gas Company, gas	13 65	
Dec. 22	Union Gas Company, gas	5 85	
	A. E. Garbutt, pump No. 1	47 70	
	A. E. Ray, work, pump No. 1	4 00	
" 28	M. McKinley, com. fees	6 00	
Jan. 11	Wm. J. Coutts, com. fees	15 00	
			1,620 03

GORE A. AND B. DRAIN, ROMNEY.

Dec. 24	Corp. of the Twp. of Romney, assessment for drain.	$150 00	
			150 00

HENISBERGER SOUTH DRAIN.

Aug. 29	J. J. Newman, report, plans, etc.	$52 00	
Nov. 9	Jerry Haskell, ditching	40 00	
Dec. 3	Ben Haskell, ditching	150 00	
" 18	Ben Haskell, ditching	40 00	
			282 00

HICKEY DRAIN.

Jan. 16	Hy. Loop, ditching	$14 00	
	Vic. Gardiner, ditching	24 00	
" 19	Jas. Conley, ditching	8 50	
	Jas. Conley, bridge and damages	35 00	
" 20	Levi Lee, ditching	20 00	
" 21	R. E. Peters, damages	15 00	
" 27	H. Loop, ditching	10 00	
Feb. 3	Vic. Gardiner, ditching	22 00	
	Hy. Loop, ditching	8 00	
" 6	Ernie Wilson, ditching	10 00	
" 9	McCubbin & McGregor report	19 75	
Mar. 17	Ernest Wilson, ditching	13 50	
" 22	Vic. Gardiner, ditching	23 00	
" 23	Wm. Coffell, ditching	12 00	
	Vic. Gardiner, ditching	13 50	
" 27	Jno. McLaren, ditching	7 50	
Apr. 3	Vic. Gardiner, ditching	12 00	
" 6	Vic. Gardiner, ditching	12 00	
" 7	E. Wilson, ditching	4 00	
" 12	R. E. Peters, ditching	13 00	

1915			
May 8	Vic. Gardiner, ditching	37 50	
	Rich. Peters, ditching	10 00	
June 11	Job Tasker, grading	15 00	
July 1	Registrar of Kent, registering by-law	2 00	
" 12	Chas. Marshall, ditching	66 00	
" 16	R. J. Brown, ditching	106 00	
Nov. 13	Wm. Vincent, ditching	525 00	
" 17	Jno. Powell, damages	12 50	
Dec. 4	Strans Land Company, damages	8 00	
" 27	Vic. Gardiner, ditching	20 00	
Jan. 16	P. Lahey, ditching	40 00	
" 8	Henry Loop, ditching	9 00	
" 5	Vic. Gardiner, ditching	18 00	
			1,165 75

JOHNSTON DRAIN.

July 26	C. R. McColl, report, plans, etc.	$38 00	
			38 00

KENNEDY DRAIN.

June 17	J. J. Newman, report and plans	$40 00	
Oct. 19	Hy. Atkinson, com. fees	2 50	
			42 50

KELLY DRAIN.

Nov. 30	Wm. Graham, tile	$19 20	
			19 20

KING AND WHITTLE DRAIN.

May 13	H. Sloan, spikes for bridge	$1 35	
Oct. 20	Stan. Smith, hauling steel and gravel	26 25	
	Stan. Smith, hauling steel and gravel	3 00	
" 25	Park Bros., steel for bridges	53 30	
" 27	A. McLeod, iron for bridges	2 75	
" 29	J. F. Dawson, gravel	7 80	
Nov. 4	A. O. Book, drawing cement	3 00	
" 2	B. B. Smith, com. fees	7 50	
" 4	Geo. Kett, building bridge	74 00	
" 16	W. A. Johnston, cement for bridge	34 00	
Dec. 1	J. S. Richardson, lumber	10 72	
			223 67

MALOTT DRAIN REPAIRS, 1915.

Aug. 28	McColl & Fletcher, report and plans	$114 00	
			114 00

MOFFATT EXTENSION DRAIN.

July 10	Nelson Irwin, drawing gravel, etc.	$17 00	
" 28	W. A. Barr, cement, farm bridge	20 40	
Aug. 7	H. S. Lloyd, for farm bridge	50 00	
	Robt. Johnston, gravel	6 50	
Sept. 11	Jno. Johnston, steel for bridge	16 08	
" 14	E. Hope, work on bridge	24 00	
	G. D. McPherson, cement	11 80	
	Wm. Osborne, drawing cement	2 00	
Nov. 2	James Sams, gravel	7 20	
Dec. 18	Jno. Wands, com. fees	4 00	
			158 98

McLeod Drain Extension.

1915			
Mar. 16	Angus Campbell, for land	$67 00	
July 5	Registrar of Kent, registering by-law	2 00	
			69 00

McDougall Drain Repairs.

June 18	Fred Trevastis, automatic lids	$6 75	
Aug. 28	J. J. Newman, report and plans	138 00	
Nov. 22	J. A. Fletcher, put in tile	2 00	
" 30	Wm. Graham, for tile	2 52	
Jan. 2	Alex. Farquharson, prep. by-law	2 00	
			151 27

McKim Drain West.

Nov. 9	McColl and Fletcher, report, plans, etc.	$28 00	
Dec. 8	R. J. Brown, ditching	110 00	
			138 00

McIntosh Drain.

Jan. 11	Wm. J. Coutts, com. fees	$15 00	
" 2	Alex. Farquharson, prep. by-law	3 00	
			18 00

McGregor Drainage Works.

Mar. 11	H. Callwood, insurance	$12 00	
" 23	Union Gas Company, gas	1 05	
" 9	F. Beno, pumping and repair	61 64	
Apr. 21	Union Gas Company, gas	13 20	
" 26	Park Bros., steam gauge	4 00	
May 1	F. Beno, pumping	25 50	
" 15	Union Gas Company, gas	4 50	
July 13	F. Beno, pumping	30 00	
" 26	F. Beno, pumping	18 75	
Aug. 17	Union Gas Company, gas	7 95	
Oct. 25	H. Callwood, insurance	12 00	
Dec. 4	C. R. McColl, report, plans, etc.	35 00	
" 7	Frank Beno, work, pumping	10 75	
" 22	Union Gas Company, gas	4 20	
" 28	M. McKinley, com. fees	5 50	
Jan. 11	W. J. Coutts, com. fees	5 00	
			251 04

No. 1 Government Drain.

Feb. 6	W. H. Mancell, damages	$26 00	
Mar. 15	Hill Bros., tile	4 25	
" 23	D. Fletcher, removing tree	3 00	
May 3	J. D. Johnston, ditching	10 00	
" 26	B. Haskell, ditching	50 00	
June 5	J. D. Johnston, ditching	20 00	
" 19	A. Cook, drawing gravel	18 00	
July 15	J. D. Johnston, ditching	20 00	
" 31	J. D. Johnston, ditching	35 00	
" 28	W. A. Barr, cement, farm bridge	42 50	
Aug. 4	G. D. McPherson, tile	18 00	
" 7	H. Lloyd, two bridges	133 00	
" 11	Park Bros., bridges, steel	82 00	
Sept. 7	Andrew Cook, drawing gravel	25 00	
" 10	Job Tasker, work on bridge	4 50	
" 14	Eric Hope, work on bridge	60 00	
	G. D. McPherson, cement	32 30	
" 24	Ben Haskell, ditching	20 00	
" 25	J. D. Johnston, ditching	68 00	

1915				
Oct. 9	J. D. Johnston, repair bridges		5 00	
Nov. 1	J. D. Johnston, ditching		102 00	
" 2	James Sams, gravel		16 80	
" 3	Park Bros., steel		97 89	
" 9	Jerry Haskell, put in tile		4 00	
" 15	J. D. Johnston, ditching		90 00	
" 30	Wm. Graham, tile		2 16	
Dec. 17	J. D. Johnston, ditching		15 20	
" 18	Jno. Wands, com. fees		6 00	
Jan. 2	Park Bros., steel for bridge		43 54	
" 14	T. B. Armstrong, ditching		50 00	
				1,104 14

No. 1 Government and McDougall Outlet.

July 1	Wilson Purdy, allowing machine to cross property..		$8 00	
Dec. 2	F. D. Williams, in full, for getting threshing machine into farm		12 10	
				20 10

Nos. 2 and 3 Government Drain.

Jan. 16	J. S. Richardson, cement		$68 00	
Feb. 15	A. Kett, work		80	
Sept. 15	P. G. Ludwig, 10 days spading		20 00	
Nov. 30	Wm. Graham, tile		10 80	
Dec. 4	Stanley Smith, put in tile		11 00	
Jan. 27	Jno. Dawson, for gravel		19 00	
				129 60

No. 3 Government Drain.

Jan. 16	J. S. Richardson, cement		$73 55	
Aug. 28	Vic. Gardiner, ditching		4 00	
Sept. 15	Ben. Haskell, repair farm bridge		1 25	
" 30	Tim McNearney, ditching		50 00	
Oct. 1	Ben. Haskell, ditching		25 00	
" 2	Ben. Haskell, ditching		6 00	
" 12	Ben. Haskell, ditching		84 00	
" 20	Jno. Atkinson, hauling gravel		10 50	
" 25	Stanley Smith, hauling gravel		20 25	
Nov. 1	Ben. Haskell, ditching		150 00	
" 2	Registrar of Kent, registering by-law		2 00	
" 5	Ben. Haskell, ditching		100 00	
	Minis Miflin, ditching		155 00	
" 9	Stan. Smith, hauling cement		5 00	
	Thos. Torrence, ditching		14 00	
" 10	Vic. Gardiner, ditching		50 00	
" 15	Vic. Gardiner, ditching		25 00	
	Thos. Torrence, ditching		25 00	
" 17	Thos. Torrence, ditching		13 00	
" 22	Chas. Mifflin, ditching		70 00	
" 27	Geo. Ketts, building farm bridge		71 50	
Dec. 9	M. Mifflin, ditching		170 00	
" 13	Vic. Gardiner, ditching		90 00	
	Vic. Gardiner, ditching		100 00	
" 18	Ben. Haskell, ditching		55 00	
	Thos. Torrence, ditching		90 00	
	Carl Moe, ditching		24 00	
" 22	J. F. Dawson, for gravel		8 00	
	Tim. McNearney, ditching		10 00	
	Hy. Atkinson, com. fees		32 00	
Jan. 27	Jno. Dawson, gravel		18 40	
				1,552 45

Old Drain.

1915			
Mar. 26	J. Ryan, balance construction	$44 00	
July 5	Registrar of Kent, registering by-law	2 00	
Jan. 11	Wm. J. Coutts, com. fees	20 00	
			66 00

Philips Drain.

Aug. 30	A. W. McLeod, serve notices	$1 00	
Sept. 25	McColl & Fletcher, report and plans	29 80	
" 27	A. W. McLeod, serve notices	2 00	
Nov. 13	Jerry Haskell, ditching	93 00	
" 19	Stanley Smith, drawing tile, etc.	11 00	
" 30	Wm. McGraham, tile	4 80	
Dec. 1	Timothy McNearney, ditching	70 00	
" 21	Thos. Torrence, ditching	6 00	
	F. H. McColl, *re* Vic. Gardiner	6 00	
			223 60

Powell Repair of 1915.

Oct. 25	Guy Nightenhelson, work on drain	$15 50	
	D. Bowman, work on drain	24 50	
" 26	Ralph McCord, work on drain	34 50	
	Jerry McMahon, work on drain	32 50	
" 27	Robt. Ainslee, work on drain	3 25	
Nov. 3	Jerry McMahon, work on drain	15 00	
" 10	D. Paulius, work on drain	29 25	
	Jerry McMahon, work on drain	40 00	
" 12	E. Pratt, work on drain	4 50	
	Guy Nightenhelsen, work on drain	26 95	
	Geo. Bowman, work on drain	15 00	
	H. Nightenhelsen, work on drain	2 25	
" 15	Clarence Taylor, work on drain	4 50	
" 16	Homer McMahon, work on drain	33 75	
" 17	Jno. Struthers, work on drain	1 50	
" 18	Luther Shaw, work on drain	36 00	
	Luther Shaw, work on drain	63 00	
" 19	Ralph McCord, work on drain	63 00	
" 25	Leslie Bowman, work on drain	4 50	
	D. Bowman, work on drain	49 00	
	D. Bowman, work on drain	11 00	
" 27	James Ross, work on drain	6 75	
	Luther Shaw, work on drain	8 00	
	Malcolm McKinley, com. fees	5 00	
Dec. 11	Jos. Davidson, work	5 00	
" 13	Ralph McCord, work	7 50	
			541 70

Pike and Dauphin Imp. Works.

May 14	A. E. Robinson, balance of Township's share of engineer's estimate of cost	$73 04	
			73 04

Raleigh No. 2 Drain Bridge.

Jan. 2	Alex. Farquharson, prep. by-law	$10 00	
Jan. 19	Twp. of Raleigh, for Tilbury E. share of bridge	296 67	
			306 67

Ross and Norry Drain.

Nov. 13	Tim. McNearney, ditching	$55 00	
Dec. 8	Tim. McNearney, ditching	12 00	
" 1	Homer McMahon, ditching	100 00	
" 10	Homer McMahon, ditching	61 00	
" 4	C. R. McColl, report, plans, etc.	15 00	
" 28	M. McKinley, com. fees	2 00	
Jan. 11	Wm. J. Coutts, com. fees	3 25	
			248 25

Shepley Drain.

1915			
Mar. 23	Fred. Smart, repair, four bridges	$17 75	
Apr. 23	W. G. McGeorge, inspection and attending court	10 00	
July 5	Registrar of Kent, registering by-law	2 00	
			29 75

W. J. Taylor's Drainage Works of 1915.

Dec. 24	W. J. Taylor, refund of taxes, 1915	$326 08	
			326 08

10th Con., No. 1 and 2 Drain.

July 5	Registrar of Kent, registering by-law	$2 00	
			2 00

10th Con., No. 3 and 4 Drain.

July 5	Registrar of Kent, registering by-law	$2 00	
			2 00

12 and 13 Side Road Drain.

May 21	Arsene Dupuis, lowering culvert	$12 00	
July 5	Registrar of Kent, registering by-law	2 00	
Jan. 14	Jno. Audette, work, team	27 00	
" 2	Alex. Farquharson, prep. by-law	18 00	
			59 00

Wands Drain.

Apr. 23	W. G. McGeorge, report, plans, etc.	$26 90	
Aug. 26	Thos. McCart, ditching	25 00	
Oct. 7	Jos. Ryan, ditching	109 00	
Nov. 2	Registrar of Kent, registering by-law	2 00	
" 20	H. Morris, ditching	122 00	
Dec. 27	Jno. Wands, com. fees	5 00	
			289 90

Award Drains, D. and W. C.

Apr. 28	Alex. Farquharson, Burke Award	$2 00	
	" " Davis Award	5 00	
	" " Walker Award	4 75	
	" " Patrick Award	4 50	
	" " Marchand Award	1 00	
Feb. 6	W. G. McGeorge, plans, etc., Davis Award	31 00	
" 6	" " " Payne Award	25 00	
May 18	" " " Barr Award	20 00	
Apr. 23	Judge Dowlin, hearing appeal, Barr Award	10 00	
Aug. 28	McColl & Fletcher, report and plans, Dupuis Award	15 00	
Nov. 9	C. R. McColl, work and exp., F. Williams Award	6 50	
Dec. 4	" report and plans, Ford Award	18 00	
July 26	" award, etc., B.B. Smith Award	20 00	
Nov. 27	Jno. Brent, ditching, B. B. Smith Award	51 00	
Dec. 4	C. R. McColl, *re* award B. B. Smith Award	21 85	
Jan. 16	W. G. McGeorge, survey, etc., Patrick Award	32 50	
	" " survey, etc., Burke Award	20 25	
	" " survey, etc., Marchand Award	5 75	
" 14	" " survey, etc., Davis Award	8 00	
			302 10

Sheep and Dogs.

Jan. 15	Thos. Jones, services as sheep inspector	$5 00
Mar. 30	Leroy Mifflin, refund of Dog Tax	1 00
May 1	Clara Paulus, refund of Dog Tax	1 00
	Sarah Paulus, refund of Dog Tax	1 00
" 8	Isaac Smith, for sheep killed	20 00

1915			
June 4	Robt. Chalice, for sheep killed	2 00	
	Thos. Torrence, for sheep killed	9 34	
Sept. 11	Clarence Cranston, for sheep killed	7 00	
	Richard Peters, for sheep killed	18 00	
" 29	Clarence Keiver, for sheep killed	8 00	
Oct. 19	Peter Stevenson, inspector's fees	2 50	
" 28	Chas. Tompkins, for sheep killed	22 00	
Dec. 24	W. J. Taylor, refund of Dog Tax	1 00	
Jan. 15	Geo. Robertson, sheep damage	6 00	
			103 84

MISCELLANEOUS.

1915			
Feb. 4	Wm. Graham, for painting Hall	$31 50	
	John Anderson, for arm for road grader	5 60	
	His Honor Judge Bell, services, Davis Award	7 10	
" 8	Stanley Robinson, for taxes charged in error	5 78	
" 15	Merchants Bank for Hall, Ct. Div. Cf.	7 50	
" 17	Robt. Grant, for supplies	14 70	
	National Supply Co., pipe for Hall	9 62	
" 30	B. B. Smith, trip to Toronto, *re* Hydro R.	13 30	
" 10	Hydro-Electric Co., member's fee	10 00	
Mar. 8	Alex. Farquharson, on reg. births, deaths and marriages	28 00	
Apr. 21	A. W. McLeod, for war stamps	1 00	
" 23	W. G. McGeorge, services, *re* Barr Award	5 00	
	Alex. Farquharson, com. fees on Barr Award	3 00	
May 13	Herbert Sloan, for paint and brushes for Hall	24 86	
June 15	John Bartley, for war stamps	1 00	
" 18	Fred. Trevestiss, for repairs to Hall	50	
" 23	John H. Williams, in full, damages to auto on road	12 00	
	Dusty Thibodeau, in full, damages to horse	60 00	
Aug. 7	W. Wellwood, for removing gypsies	3 00	
" 10	P. G. Murphy, for telephone tolls	85	
" 31	A. A. Wilson, for insurance for Town Hall	20 25	
Sept. 7	John Bartley, for stamps	1 00	
" 28	J. H. Smith, inspector for arbitration, Stevenson School	16 00	
" 29	Wm. Graham, for new sidewalk and doorsteps and material	75 00	
	John Bartley, for stamps	1 00	
Oct. 1	Raleigh and Tilbury Agricultural Society, grant	50 00	
" 20	George Rooks, for burying dead horse	5 00	
Nov. 3	John Bartley, for stamps	1 50	
" 4	Alex. Farquharson, fees on voters' list	9 26	
" 14	John Bartley, for war stamps	1 00	
" 17	Tilbury Telephone Company, for tolls	50	
" 24	Tilbury Telephone Company, for tolls	1 20	
Dec. 18	W. F. Robertson, selecting jurors	3 00	
" 23	Wm. McK. Graham, supplies	5 00	
" 28	M. McKinley, expenses, disbursed	1 50	
" 31	Jas. McHurdy, for lights and repairs, Merlin	78 05	
Feb. 8	Stanley Robinson, gen. sch. rate refunded	30 1 61	
Nov. 12	Watson Guy, refund taxes, lot 6, con. 13, paid twice	7 14	
" 25	Jas. D. Grant, fees *re* line fence, Ferguson vs. Ball	2 00	
Dec. 14	Chas. Shivas, fees *re* line fence, Ferguson vs. Ball	2 00	
Jan. 5	Alex. Farquharson, voters' lists	9 52	
" 13	A. E. Crew, taxes refunded, charged in error	3 40	
			539 54
	Total disbursements		$101,149 66
1915			
Jan. 1	Merchants Bank, overdraft		5,629 66
			$106,779 32

123 Bay Street, Toronto, Ontario, April 14, 1916.

To the Mayor and Council, Municipality of the Town of Cochrane.

Gentlemen,—My appointment by the Provincial Municipal Auditor, J. W. Sharpe, K.C., to make an audit of the books, accounts, and moneys of your municipality for the year 1915 was confirmed by an Order-in-Council under date of the 9th day of March, 1916.

TOWN OF COCHRANE.

Balance Sheets.

Cash balance sheet at the 31st of December, 1915, exhibits a surplus of $337.74. The previous years surplus of $2,325.68 was drawn on to the extent of some $2,000.00, due to expenditures made that were not provided for in the current year's estimates. These expenditures were mainly on account of the excess cost over the funds on hand for the town hall and jail building, and the work on the cemetery.

During the year taxes on T. & N. O. Ry. Commission lots were rebated and the Commission on their part gave a clear title to the Agricultural Grounds. However, the taxes rebated were some $500.00 in excess of the amount due on the Agricultural Grounds, and such difference partially accounts for the using up of the $2,000.00 surplus brought forward from the previous year.

Grant of $500.00 to the British Red Cross will be levied for in the year 1916, and it is correct to show it as an asset as the grant was given too late in the year to include it in the levy.

Capital expenditure provided for by By-law 134 amounting to $3,835.38 has been treated as an asset, as the payment of these accounts were made out of the general town funds with the exception of the Gartshore Pipe Co., which was unpaid at the year end.

Due to some technicality debentures covering this construction work were not sold until 1916. The general fund, however, will be reimbursed out of the proceeds of such debenture sales.

Statement of fixed assets and deferred liabilities is similar to those shown in previous years, with the exception that the Public School Debenture liability is offset by an asset of a similar amount named Public School Supporters. The schools are not a true asset of the Town and therefore cannot be shown as such.

The ratepayers investment of some $10,000.00 acts as a reserve to cover what depreciation there may be in the assets of the Town.

Assessment Roll.

Affirmation of the Assessor was attached to the roll.

Town Roll was neatly prepared but the School Roll of the unorganized district could be improved upon.

Alterations of the roll were checked with the authorization contained in the Minutes of the Court of Revision and found correct.

The amount of the assessment for 1915 was about $40,000.00 less than the previous year.

Assessment statement is contained herewith and shows that part chargeable for general purposes, public and separate school.

COLLECTOR'S ROLL.

Roll was in very good condition. The additions, extensions and summary were correct, and needed no amendment.

Form of the roll has been greatly improved and there should be no fear of any further complications as to the dates and amounts paid on taxes if this form is adhered to.

Tax Collector's duplicate receipts were seen for all amounts paid on account of taxes. In this respect the original of a few receipts that had been cancelled were not attached to the duplicates, but in this special case it was among those that the bank had issued, and they may not have been aware that it was necessary to retain the same.

Collector's Rolls summaries in detail are included among the statements.

All tax collections were deposited into the bank, and the final settlement with the Collector at the 25th of January, 1916, discloses that he had overdeposited into the bank 21c.

Arrears Register was in order and all taxes uncollected were entered onto the 1915 roll. A number of uncollected taxes such as business, income, duplicate assessments and those charged to a former tax collector were written off by order of Council.

The following questions that were asked by the officials during the audit were submitted to the Provincial Municipal Auditor, J. W. Sharpe, K.C.:

Q.—1. Although there are plenty of goods to be distrained on for the taxes of 1915 the Council instruct the Collector to return the rolls, inserting in such cases "Instructed by Council to return uncollected." The rolls are returned January 25 of this year. Can the Treasurer distrain immediately after the return of the roll?

A.—No.

Q.—2. The rolls are returned as per question No. 1 and 10 per cent. is added May 1st. Can Treasurer distrain on May 2nd?

A.—No.

Q.—3. Would a Treasurer's sale of lands for taxes be legal if it could be shown that there was plenty of goods on the property to be sold that could have been distrained on by the Collector or Treasurer at some date previous to the sale?

A.—Under conditions stated if Collector has neglected to collect, answer would be No. In some cases would be legal though Treasurer had not distrained under Section 141.

Q.—4. Can a sale of land for taxes be held if there is plenty on the land that can be distrained on? Section 141.

A.—In some cases under Section 141. Yes.

Q.—5. Owing to general shortage of money no distraints are made for the taxes of the year 1915 and the Council instructs the Collector to return the rolls as instructed by Council to return uncollected according to Section 119, the Collector's oath being as follows:

"I, Guy C. Lawson, of the Town of Cochrane, in the District of Temiskaming, Collector for the said Municipality of the Town of Cochrane for the year 1915, make oath and say: That the amounts mentioned in the within roll in columns 32 and 33, pages 1 to 87, remain unpaid and that same have been returned as such according to instructions of Council."

A.—Section 119 applies only where "taxes mentioned in the Collector's Roll remain unpaid and the Collector is not able to collect the same."

The Collector's oath does not comply with the requirements of Section 121, which states that:

"Upon making oath before the Treasurer that the sums mentioned in such account remain unpaid, and that he has not, upon diligent inquiry, been able to discover sufficient goods or chattels subject to distress under Section 109, whereon he could levy the same or any part thereof, the Collector shall be credited with the amount not realized."

"In cities and towns and any other municipalities having power to sell lands for non-payment of taxes the Collector of taxes may qualify the oath, by sub-section 1, directed to be made by him by showing that in respect of vacant land, he has not attempted to distrain upon the goods and chattels of the owner except upon such vacant land."

Q.—6. Certain ratepayers do not pay their taxes for three years and the property is liable for sale. In their taxes is a water frontage rate which has been carried forward in their taxes although they have paid their water rates. Can the full amount of taxes be recovered?

A.—If the act is to be construed strictly the ratepayers must present their receipt for water rates to Collector in each year in order to have reduction made. The intention of the act, however, is that the rates shall be deducted from the taxes.

Debentures.

Debenture statement exhibits the outstanding debenture debt at the year end.

Foot notes thereon explain items that could not be embodied in the main part of the statement.

Debenture Register was checked up and found correct.

School debentures sales under By-law 101 were in blocks and sub-statements are included showing the receipt and disposition of the moneys.

Debenture sales should be entered into the cash book at the full amount of the face value of such debentures and the discount thereon be entered on the payment side, so that the transactions will be clearly shown and the discount not lost sight of.

Dog Tax.

Dog tags were all accounted for, either by the receipt of cash for the dog tax, by the tags unsold, and in the Treasurer's care, which were checked over, and by the tags issued to replace those lost by the holders for which the Treasurer has written receipts.

Bonds.

Treasurer's Bond No. 1356, Ocean Accident and Guarantee Company, covers H. J. Brown to the extent of $5,000.00. Premium of $20.00 is paid by the Town and the policy expires on April 3, 1916. Renewal receipt extending the duration of the policy was seen.

Tax Collector's Bond, given by G. E. Fauquier and Guy C. Lawson, on the 4th day of October, 1915, and expiring on the 1st of January, 1917, for the sum of $5,000.00, covers G. C. Lawson while acting as Tax Collector.

Insurance.

Fire insurance in force is detailed hereunder.

Policy No.	Company.	Insurance.	Expires.	Premium.
10506621	London & Lancashire	$3,263 33	1st Feb., 1917	$149 93
1920671	Union Assurance	3,263 33	" "	149 96
5140226	Northern Assurance	1,634 17	" "	75 07
313365	General Fire	1,634 17	" "	75 06
		$9,795 00		

Above policies cover property as follows:

Town hall and jail	$4,000 00
Office furniture and cells	600 00
Fire hall	1,200 00
Fire hall contents	2,400 00
Agricultural grand stand	405 00
Stable	390 00
Pumphouse	800 00

Policy No. 9251, dated January 24, 1916, in the General Accident Assurance Co. covers all municipal employees as shown on the Pay Rolls of the Town. Minimum premium is $100.00; rate $3.55 per $100.00 of pay roll. Employees insured for $1,500.00 each.

Cheques and Vouchers.

Cheques and invoices were seen for all payments and confirmation of such payments is contained in the Minute Book, with the exception of salaries, which are covered by the by-law appointing the officials.

Cheque No. 2491 for 75c. paid by the bank was not signed by the Mayor.

Care should be taken that the postage stamp or stamps placed on cheques do not obliterate the serial number of the cheque or other important information Several of the cheque numbers were covered in this way.

Water Department.

Revenue statement for the year which is partially estimated shows a surplus of $277.01.

In the previous year there was a deficit of $1,600.00. The surplus has been occasioned by the increase in the water rate receipts, the levying of a four mill special water frontage rate, and the decrease in the maintenance cost.

Allowances made during the year amounted to $102.07. These were practically all comprised of charges made on the register against water takers, which were incorrect, and on a verbal report from the Town Foreman, Mr. Caswell, the Treasurer made a credit on the register. It is essential that all allowances be listed with explanation and submitted to Council for confirmation. Inclusion in the minutes of such lists is sufficient authorization for the Treasurer to make such allowances.

A disconnecting or connecting order is needed in this department so that there is some written document authorizing the commencement of the charge for water or the cessation thereof.

Public School.

Abstract of receipts and disbursements of maintenance account and also building account are attached hereto.

Substatements disclosing the receipt of school debenture proceeds and their deposit into the special savings account and the final payment over to the school board are also shown.

Treasurer's bond number 054462, Dominion of Canada Guarantee Company, for $1,000.00 was scrutinized. The premium is $5.00 and the expiry date 1st February, 1917.

Insurance carried on the old school buildings is as follows:

Policy No.	Company.	Expires.	Prem.	Amount.	School.	Equip.
1777679	Union Assurance ...	14 Oct., 1917	$46 80	$1,300 00	$1,100 00	$200 00
1920520	" " ...	8 Oct., 1916	45 60	1,500 00	1,300 00	200 00
1920557	" " ...	17 Nov., 1916	55 65	1,500 00	1,200 00	300 00
			$148 05	$4,300 00	$3,600 00	$700 00

The new school building was destroyed by fire on the 29th of December, 1915. The insurance thereon was $24,000.00, of which $20,000.00 was paid to the Board in January, 1916. The balance of $4,000.00 is held by the Company pending suit in reference to certain liens on the building.

Municipal Cash Book as authorized by the Statutes was put into use at the 1st of January, 1915, and the arrangement therein is a marked improvement on the old two column cash book.

Minute Book, cheques and other vouchers were all in order and neatly arranged.

Separate School.

Statement from the Secretary-Treasurer of the Separate School Board showing the amounts received by him from the Town Treasurer were compared with the Municipal Cash Book and Town Ledger and found to be correct.

Minutes and By-Laws.

Scrutiny of these books found all in order.

All minutes were signed by the Mayor and Clerk, and by-laws were similarly signed and bore the seal of the Corporation.

Licenses.

Treasurers receipt should be made out for the amount paid as license fee, and such receipt number should be inscribed on the license form.

License register has not been kept, but the Treasurer has ledger sheets written up containing the names of all licensees under the special section to which they refer and in the absence of the register this is sufficient.

Town Hall and Hospital.

Money on deposit for hospital building in a special savings account with the accrued interest was transferred over to the Hospital Board for the purposes for which it was intended.

Money on deposit for the purpose of building a town hall and jail was also used up for that purpose during the year, and the Town is to be complimented on the building, which is a great improvement over the old quarters, and more in keeping with the dignity of the Town.

Bank.

Bank reconciliation at 31st December, 1915, and certificate from the manager of the Bank of Ottawa are attached.

Special savings accounts for hospital, town jail and school debentures were checked and found correct. Statements of school debenture savings account are among the other statements.

Cash Abstract.

Abstract statement of receipts and payments for the year 1915 along with the details of same are attached.

In respect to the publication of the auditor's statement attention is drawn to Sec. 237, para. 7, R.S.O.

"The clerk shall publish the abstract, statements and reports in such form as the council may direct; and in the case of a local municipality shall transmit a copy of the abstract and statements to the clerk of the council of the county, and the same shall be kept in his office."

It would seem unnecessary for the council to go to a further expense of publishing the receipts and detailed disbursement contained in the auditors' report as these have already been published in the Treasurer's statement at 15 December, 1915.

Police Department.

Statements showing the settlement of the police fees for the year are included.

Advances made for police matters were all returned with the exception of that amount carried on the balance sheet.

Fines paid over by the police magistrate were compared with the items in the cash book and found correct.

Conclusion.

Improvement in the system and the care of the books is very noticeable and there is nothing to report on of a serious nature.

The return of the 1915 roll under order of the Council before the Collector had made any distraints only adds to the financial difficulty of the Town, and, moreover, this action does not comply with the *Assessment Act*.

Unless the several acts are followed and closely adhered to, legal difficulties will be the only outcome.

The 1915 roll was returned about the same date as the 1914 roll, but the Collector for the 1914 roll made distraints and the cash collections were $4,000.00 in excess of the collections made by the 1915 Collector.

Attention of the officials and the courtesy of the Council was very gratifying.

The foregoing report and the attached statements are respectfully submitted.

Henry Glover,
Auditor.

MUNICIPALITY OF THE TOWN OF COCHRANE.

Cash Balance Sheet as at 31st December, 1915.

Current Liabilities.			Liquid Assets.		
Bank of Ottawa.			*Tax Arrears.*		
Overdraft, per pass book	$5,325 92		Per Roll for 1915	$13,853 67	
Outstanding cheques	310 95		Interest, 5 per cent.	692 68	
		$5,636 87			$14,546 35
Tax Sales Lots Redeemed		147 49	*Public School Debenture Interest Savings Account*		86 92
Accounts Payable—Per list		1,060 67	*Water Rates Arrears*—Per Register		951 72
Provincial War Tax		1,068 56	*Police Department.*		
Public School Debenture Interest		86 92	S. J. Dempsay, fines	$11 00	
Debenture Interest and Principal.			John Crawford, fees, per list	21 05	
General By-law 19—Deb. due 2 Jan., '16	$2,179 66		Costs advanced	140 80	
General By-law 28—Deb. due 2 Jan., '16	4,359 33				172 85
General By-law 104—Deb. due 1 June, '16	1,305 05		*Grand Trunk Pacific R.R.*—Construction work		155 07
School By-law 101—Deb. due 2 Jan., '16	3,051 46		*Accounts Receivable*—Per list		415 14
		10,895 50	*Insurance Premiums*—Unearned		135 00
Gartshore Thompson Pipe Co.		1,564 68	*Patriotic Fund*—British Red Cross (levy in 1916)		500 00
Surplus at 31st December, 1915		337 74	*Capital Expenditure Provided by By-law No. 134.* (Debentures unsold.)		
			Well driving	$1,436 96	
			Sewer outlet	316 25	
			Waterworks pump	150 00	
			Water and sewer mains extension to hospital and public school	367 49	
			Gartshore Thompson Pipe Co., unpaid	1,564 68	
					3,835 38
		$20,798 43			$20,798 43

MUNICIPALITY OF THE TOWN OF COCHRANE.

Balance Sheet of Fixed Assets and Deferred Liabilities at 31st December, 1915.

Deferred Liabilities.	
Roads and Bridges Debentures—By-law No. 19	$21,169 02
Waterworks and Sewers Debentures—By-law No. 28	44,054 24
Consolidation Debentures—By-law No. 46	33,009 75
Waterworks and Sewers Debentures—By-law No. 52	27,403 67
Public School Debentures—By-law No. 101	34,048 54
Consolidation Debentures—By-law No. 104	21,888 35
Ratepayers' Investment at 31st December, 1915	9,891 79
	$191,465 36

Fixed Assets.		
Roads, Bridges and Sidewalks.		
By-law No. 19	$25,000 00	
By-law No. 46	11,000 00	
By-law No. 104	1,375 78	
T. & N. O. Railway	2,500 00	
Town funds, 1914	781 97	
		$40,657 75
Waterworks and Sewer.		
By-law No. 28	$50,000 00	
By-law No. 46	950 00	
By-law No. 52	30,000 00	
By-law No. 104	20,847 08	
Town funds	31 92	
		101,829 00
Real Estate.		
Lot 320	$650 00	
Lots 216, 217, 218	300 00	
Lot 22, Glackmeyer	100 00	
Stable	469 43	
		1,519 43
Public School Supporters		34,048 54
Fire Hall Buildings		1,550 00
Fire Department Equipment		3,200 00
Cemetery Land.		
Old	$501 70	
New	445 70	
		947 40
Agricultural Grounds.		
Land	$2,000 00	
Buildings	485 00	
		2,485 00
Town Hall and Jail Lot No. 215		4,521 99
Office Furniture		256 25
Loose Tools—Grader, etc.		450 00
		$191,465 36

TOWN OF COCHRANE.

REPORT TO THE BUREAU OF INDUSTRIES OF THE DEBTS OF THE MUNICIPALITY OF COCHRANE FOR THE YEAR ENDING 31ST DECEMBER, 1915.

Description of Debt.	No. of By-law.	Original amt. of debt.	Date when issued or contracted.	Sold or unsold.	No. of Debs.	Amt. of Deb. and Int.	Rate of Int.	Amt. Prin. Pd. in '15.	Amt. Int. Pd. in '15.	Balance Prin. unpaid Dec. 31, '15.
Roads and Bridges	19	25,000 00	1910	Sold	20	$2,179 66	6%	$858 05	$1,321 61	$21,169 02
Waterworks and Sewers	28	50,000 00	1911	Sold	20	4,359 33	6%	1,618 74	2,740 38	44,054 24
Consolidated	46	38,500 00	1911	Sold	20	2,832 90	4%	1,454 33	1,378 57	33,009 75
Waterworks and Sewers	52	30,000 00	1912	Sold	20	2,615 54	6%	916 33	1,699 21	27,403 67
Consolidated	104	22,500 00	1914	Sold	20	1,961 65	6%	611 65	1,331 77	21,888 35
Public School	101	35,000 00	1914	Sold*	20	3,051 46	6%	†951 46	2,100 00	34,048 54
Waterworks and Sewers Ext..	134	5,500 00	1915	Unsold	20	479 52	6%	.....	.....	5,500 00
		$206,500 00						$6,410 56	$10,571 54	$187,073 57

*No. 1 Debenture cancelled and not sold. Levy made to pay same handed to Public School Board.
†Balance of proceeds, $1,859.64, received in January and February, 1916.

TOWN OF COCHRANE.

Accounts Payable at 31st December, 1915.

Northern Ontario Light & Power Company, December account	$294 67
G. Lawson, Collector, salary balance	226 75
Provincial Board of Health, District Officer account	103 94
Harmer & Durack, furniture	78 14
W. H. Warke, legal	10 00
Cochrane Telephone Company, supplies	6 78
C. S. Giles, repairs	40 59
A. Vallee, lumber	2 45
S. Leger, nails	80
H. Pawson, coal	36 75
Knight Bros., supplies	2 05
F. A. Child, hardware	21 20
Taylor Hardware Company, hardware	4 45
Wilson Bros., repairs	2 90
E. Caswell, express	50
Northland Post, printing, etc.	58 75
Anderson House, prisoners' meals	1 80
H. J. Brown, disbursements	3 00
C. J. Dix, repairs	1 40
Town pay roll, wages	52 00
Fire pay roll, wages	111 75
	$1,060 67

Accounts Receivable.

Hunt & Van Rassell, water	$11 85
T. C. Railway, water	37 73
Mr. and Mrs. Rumford, waterworks	30 00
W. G. Hunt, water and gravel	268 07
J. Williams, gravel	8 00
S. J. Mackey, Board of Health	18 50
W. McDouglas (paid 1916)	25 25
Wm. Young (paid 1916)	15 74
	$415 14

TOWN OF COCHRANE.

Water Department.

Revenue Statement for the Year 1915.

Income—		
Total net charges for year per Register		$3,447 27
Sundry charges		122 32
Special levy, water frontage, net		1,857 42
Fire protection, 47 hydrants at $40.00		1,880 00
Expenses—		
Power, 12 months at $200.00	$2,400 00	
Engineer at pump house	600 00	
Maintenance for 1915	500 00	
Depreciation—6 per cent. on $53,000.00	3,180 00	
Foreman (proportion)	350 00	
Surplus	277 01	
	$7,307 01	$7,307 01

WATER REGISTER SUMMARY FOR THE YEAR 1915.

To Arrears, 1st January, 1915, folio 113	$509 76	
" Water rates, year 1915, folio 113	3,718 51	
By Cash receipts, folio 113		$2,983 74
" Discounts allowed, folio 113		190 84
" Allowances, 1915		80 40
" Allowances, 1914		21 67
" Arrears, 31st December, 1915		951 72
To Cash overpaid	10	
	$4,228 37	$4,228 37

TOWN OF COCHRANE..

PUBLIC SCHOOL.

ABSTRACT OF RECEIPTS AND DISBURSEMENTS.

Maintenance Account.

1st January to 31st December, 1915.

RECEIPTS.

Cash in bank, 1st January, 1915	$174 15
Town, on requisition	4,553 16
Government grants	401 79
Interest transferred from Building Account	255 40

DISBURSEMENTS.

Teachers' salaries	$3,562 00
Other salaries	568 00
Fuel and upkeep	174 03
Insurance	538 25
Repairs	71 35
Equipment purchased	171 94
Printing and stationery	33 84
Examinations	5 65
Sundries	58 71
Cash in bank, 31st December, 1915	200 73
$5,384 50	$5,384 50

TOWN OF COCHRANE.

PUBLIC SCHOOL.

ABSTRACT OF RECEIPTS AND DISBURSEMENTS.

Building Account.

1st January to 31st December, 1915.

RECEIPTS.

Proceeds debenture sales at 95 per cent.	$31,427 42
Interest on bank balance	328 50
Ward & Ainsworth, deposit on tender	19 40

DISBURSEMENTS.

W. G. Hunt, building	$19,398 41
Geo. Taylor Hardware Co., Limited, plumbing and heating	4,690 94
Ward & Ainsworth, electric work	280 48
Angus & Angus, Architects	1,178 00

J. Williams, Inspector		750 00
T. & N. O. Railway, deed of land		50 00
Max Henry, grading		50 00
Bradley & McDouglas, insurance		60 00
Sundries		25 60
Interest transfer to General Account		255 40
	$31,775 32	$26,738 83
Cash in bank at 31st December, 1915	.....	5,036 49
	$31,775 32	$31,775 32

TOWN OF COCHRANE.

Assessments for the Year 1915.

Town—	
Total assessment	$1,708,247 00
Less exemptions	640,241 00
Taxable	$1,068,006 00
Real property	$932,545 00
Business	109,186 00
Income	26,275 00
	$1,068,006 00
Town—	
Public School	$872,721 00
Separate School	195,285 00
	$1,068,006 00
Unorganized District—	
Public School	$105,275 00
Separate School	26,775 00
	$132,050 00

Summary.

General Purposes	$1,068,006 00
Public School	977,996 00
Separate School	222,060 00

TOWN OF COCHRANE.

Collector's Roll Summaries for the Year 1915.

Unorganized—	
Public School, $105,275, at 3½ mills	$368 62
Separate School, $26,775, at 11 mills	294 60
Tax Arrears	692 23
	$1,355 45
Town—	
General Town Purposes, $1,068,006, at 20 mills	$21,360 12
Public School, $872,721, at 3½ mills	3,056 00
Separate School, $195,285, at 11 mills	2,148 23
War Tax, $1,068,006, at 1 mill	1,068 56
Water Frontage	3,195 98
Tax Arrears	5,072 56
	$35,901 45

SUMMARY OF COLLECTOR'S ROLL FOR THE YEAR 1915.

Assessment.	Purpose.	Rate.	Amount.
$1,068,006 00	General, at	20 mills	$21,360 12
977,996 00	Public School, at	3½ mills	3,424 62
222,060 00	Separate School, at	11 mills	2,442 83
1,068,006 00	War Tax, at	1 mill	1,068 56
	Water Frontage		3,195 98
	Tax Arrears		5,764 79
			$37,256 90

TOWN OF COCHRANE.

TAX COLLECTOR'S SUMMARY.

Town Roll for 1915.

To Current Taxes, folio 97	$30,828 89	
" Arrears of Taxes, folio 97	5,072 56	
" Interest Added, folio 97	55 09	
By Cash Collected, folio 97		$21,287 57
" Discount Allowed, folio 97		707 02
" Water Frontage Rebates, folio 97		1,213 59
" Taxes, 1915, Unpaid, folio 97		8,717 67
" Tax Arrears Unpaid, folio 97		4,010 57
" Cash Paid to Treasurer, Roll No. 719		12 50
" " " " 290		7 62
	$35,956 54	$35,956 54

Unorganized District Roll for 1915.

To Current Taxes, per Roll	$663 22	
" Arrears of Taxes, per Roll	692 23	
" Interest Added, per Roll	2 69	
" Cash paid twice on Hugh, No. 109	88	
By Cash Collected, per Roll		$483 06
" Discount Allowed, per Roll		10 90
" Taxes, 1915, Unpaid, per Roll		273 95
" Tax Arrears Unpaid, per Roll		572 17
" Cash Paid Treasurer, Lamarche, No. 405		18 94
	$1,359 02	$1,359 02

TOWN OF COCHRANE.

TAX COLLECTOR'S ACCOUNT AT 31ST DECEMBER, 1915.

To Amount to be Collected per Town Roll	$35,901 45	
" Amount to be Collected per School Roll	1,355 45	
" Duplicate Payment, Lot 109, Hugh Subdivision	88	
" Interest Imposed	46 97	
" Business Tax, 1914, Can. Express, Collected	136 48	
By Cash Paid over to Treasurer		$21,607 35
" Cash Paid to Treasurer		39 06
" Bank Exchange		9 64
" Discount Allowed		717 92
" Water Frontage Rebated		1,213 59
" Taxes Uncollected, 31st December, 1915		13,853 67
	$37,441 23	$37,441 23

TAX COLLECTOR'S BANK ACCOUNT, YEAR 1915.

1915.	Bank Deposits.	Paid to Town Treasurer.	Bank Exchange.
September	$15,146 24	$15,000 00	
October	706 31	844 78	$7 77
November	1,561 38	1,500 00	55
December	4,203 06	3,228 48	1 32
		1,034 09	
1916.			
January	290 33	290 33	
	$21,907 32	$21,897 68	$9 64
		9 64	
		$21,907 32	

TOWN OF COCHRANE.

TAX COLLECTOR'S ACCOUNT FOR THE YEAR 1915, ON RETURN OF ROLL, 25TH JANUARY, 1916.

Guy C. Lawson, Tax Collector.

To Amount to be Collected, per Town Roll		$35,901 45	
" Amount to be Collected, per School Roll (Unorganized District)		1,355 45	
" Duplicate Payment, Lot 109, Hugh Subdivision		88	
" Interest Imposed, C.B. 66		57 78	
" Business Tax, 1914, Can. Express, Collected		136 48	
By Cash Collected, C.B. 66			$21,907 11
" Discount Allowed, C.B. 66			717 92
" Water Frontage Levy Rebated			1,213 59
" Taxes Returned Uncollected.			
Arrears	$4,582 74		
Current	8,991 62		
			13,574 36
" Cash Paid to Treasurer, Roll No. 719	$12 50		
" " " " 290	7 62		
" " " Lamarche, No. 405	18 94		
			39 06
		$37,452 04	$37,452 04

TAX COLLECTOR'S CASH ACCOUNT.

To Tax Collections	$21,907 11	
By Bank Deposits		$21,897 68
" Bank Exchange		9 64
To Overdeposit	21	
	$21,907 32	$21,907 32

TOWN OF COCHRANE.

TAX ARREARS RECONCILIATION AT 30TH APRIL, 1915.

To Tax Arrears Returned on 1914 Roll	$10,874 30	
" Water Frontage Tax, 1914, Collected	12 00	
" Interest Added	118 37	
" Interest Arrears Added	14 39	
By Cash Paid to Treasurer to 30th April, 1915		$2,354 93
" Water Frontage Rebate		13 60
" Income and Business Taxes, 1914, per list (see 1914 Report)		585 42
" Uncollectible Taxes Written Off, per list		248 78
" T. N. O. Railway Taxes Rebated, *re* M.B. 189		2,204 40
" Tax Arrears entered in Arrears Register		5,611 93
	$11,019 06	$11,019 06

REGISTER OF ARREARS SUMMARY FOR THE YEAR 1915.

To Tax Arrears on Register, 1st May, folio 101	$5,611 93	
" Interest Added	6 07	
" Interest Added, 1st May, folio 101	559 59	
" Tax item omitted from 1914 Returns	10 47	
By Cash Paid to Treasurer		$386 31
" Water Frontage Rebate		6 40
" Taxes Dropped (Duplicate Assessments)		30 56
" Tax Arrears entered on 1915 Roll.		
Town Roll		5,072 56
School Roll		692 23
	$6,188 06	$6,188 06

TOWN OF COCHRANE.

OUTSTANDING BUSINESS AND INCOME TAXES AT 30TH APRIL, 1915.

Dealt with by Council.

Roll No.	Name.	Lot No.	Amount.
184	Joseph Bradette	157	$5 80
221	K. Cohen	173	5 30
292	Walter Thompson	226	5 30
298	C. E. Brown	229	5 30
335	M. David	258	5 30
336	A. David	258	5 30
337	G. Assaf	258	5 30
339	D. Caldarelli	258	5 30
351	R. Weir	268	10 60
372	W. Howe	279	13 25
434	F. C. Ivy	321	7 95
441	H. G. Murdoch	323	13 25
442	J. Pearce	323	10 60
497	C. Thomas	337	10 60
499	H. A. Ogilivie	337	13 25
584	G. Sweeney	402	5 30
585	Sam. Lowen	402	5 30
585	G. Kacher	402	5 30
716	A. Cyr	506	5 80
790	B. Marcellus	200	5 30
806	M. Cashaback	579	5 30
882	F. Prieve	661	7 95
883	Jos. Hate	661	7 95
1842	F. H. Baumgardner	T.C.R.	7 95
1849	B. M. McDougal	T.C.R.	26 50
1861	E. J. Booth	...	5 30
126	Fred. Oscarhuch	119	7 95
130	Mike Rutz	122	6 63
210	Jake McGregor	171	13 25
283	J. Talaskevich	222	13 25
287	Mrs. and Mr. T. C. Scholtz	224	2 65
359	A. E. Mallette	279	2 90
374	Scottish Tailoring Company	279	7 70
476	Geo. Patrick	332	7 29
494	Harry Foley	336	23 85
555	G. W. Ashlee	381	7 95
558	Phillip O'Connell	381	7 95
615	Z. Therrien	421	8 70
1857	Dominion Express Co. (paid Treasurer since)	T.N.O.	132 50
1858	Canadian Express Co. (paid Treasurer since)	T.N.O.	132 50
			$585 42
	Cash paid Treasurer		265 00
			$320 42

TOWN OF COCHRANE.

Tax Arrears for 1914 Stated to be Uncollectible and Dealt With by Council.

Lot No.	Amount.	Reason.
S. ½ 5, Township Lamarche	$2 00	Double Assessment.
S. ½ 7, Township Lamarche	6 00	Double Assessment.
20, Con. 3, Township Glack.....	1 99	Charged Young.
218	20 56	Balance of business assessment, rink.
Pt. 245	4 31	Charged Young.
328	9 65	Rebate to M. Daneff.
346	42 40	Methodist Church.
379	58 00	Excess or wrong Assessment.
404	33 57	School rate corrected.
558	7 10	School rate corrected.
624	7 75	Charged Young.
619	7 75	Charged Young.
Matteson, T.C.R.	21 20	Property exempt.
G. Warrell, warehouse	13 25	Business.
J. Thompson, warehouse	13 25	Business.
	$248 78	

Wrongful Assessments.

S. ½ Lot 1, Con. 5, Lamarche.....	$3 59
N. ½ " 1 " 5 "	2 98
N. ½ " 2 " 5 "	3 74
S. ½ " 2 " 5 "	2 49
N. ½ " 1 " 6 "	6 23
S. ½ " 1 " 6 "	1 65
N. ½ " 2 " 6 "	9 88
	$30 56

TOWN OF COCHRANE.

Details of Sale of School Debentures under By-law 101 to Wood, Gundy & Co.

To Issue of Debentures	$35,000 00	
By Debenture No. 1 Cancelled and Levy returned to School Board		$951 46
" Discount on Sale (5 per cent. on $34,048.54)		1,702 40
" Cash Received in year 1915		30,486 50
" Cash Received 31st January, 1916		143 70
" Cash Received 16th February, 1916		1,715 94
	$35,000 00	$35,000 00

Disposition of School Debenture Sale Proceeds under By-law 101.

To Total Proceeds by Sales Wood, Gundy & Co.	$32,346 14	
" Debenture No. 1 Cancelled and Levy previously made for Principal returned to Board	951 46	
" Savings Bank Interest	44 46	
By Cash Paid to School Board, 1915		$31,427 42
" Cash Paid to School Board, 1916		1,859 64
" Costs of Issue		55 00
	$33,342 06	$33,342 06

TOWN OF COCHRANE.

School Debenture Savings Account, re By-law No. 101.

1915.			
Mar. 8	To Deposit, Sale Debentures	$11,370 83	
" 22	" Deposit, Levy	951 46	
Apr. 19	" Bank Interest	44 46	
" 19	By Transfer to General Account		$12,366 75
		$12,366 75	$12,366 75
To Accrued Interest on Debentures Sold, 1915		$519 82	
" Levy of Debenture Interest, 1914		2,100 00	
" Bank Interest on Deposits, May 31st, 1915		8 30	
" Bank Interest on Deposits, November 30th, 1915		38 80	
By Transfer to General Fund			$2,580 00
" Balance in Bank			86 92
		$2,666 92	$2,666 92
To Balance 1st January, 1916		$86 92	
" Accrued Interest on Debentures Sold, January 29th, 1916..		117 45	
" Accrued Interest on Debentures Sold, February 11th, 1916..		8 02	
" Bank Interest		55	
By Balance in Bank, 29th February, 1916			$212 94
		$212 94	$212 94

TOWN OF COCHRANE.

Bank Reconciliation at 31st December, 1915.

By Bank Overdraft, per Cash Book, folio 98		$5,636 87
To Outstanding Cheques, per list	$310 95	
" Bank Overdraft, per Pass Book	5,325 92	
	$5,636 87	$5,636 87

Outstanding Cheques.

No. 1747	$1 13
2000	1 25
2246	2 00
2516	9 45
2687	45
2835	8 50
2877	5 00
2885	100 00
2893	10 00
2895	150 00
Coupon By-law 104	23 17
	$310 95

BANK CERTIFICATE.

THE BANK OF OTTAWA.

Cochrane, Ont., March 18, 1916.

In reply to your letter of the 18th instant, the following were the balances of the Town of Cochrane accounts as at 31st December, 1915.

MUNICIPALITY OF COCHRANE.

Current Account.

Debit balance of five thousand three hundred and twenty-five dollars and ninety-two cents	$5,325 92

Public School Debenture Account.

Savings Department—Credit Balance	$86 92
Interest earned but not added to account	(20c.)

The above overdraft represented the town's total indebtedness to the Bank as at 31st December, 1915.

Yours truly,

(Sgd.) ALEXANDER SMITH,
Pro. Manager.

FRANK HARDMAN,
Pro. Accountant.

TOWN OF COCHRANE.

THOS. PORTLAND.

Police Fees for Year 1915.

To Balance Unpaid 1st January, 1915	$25 40	
" Fees to 20th February	44 75	
By Cash Received—		
January		$5 25
February		64 90
	$70 15	$70 15

VICTOR ELOY.

Police Fees for Year 1915.

To Fees to 31st December, 1915	$130 95	
By Cash—		
March		$20 00
April		20 00
May		20 00
June		10 00
July		10 00
August		10 00
September		20 00
November		10 00
December		10 95
	$130 95	$130 95

TOWN OF COCHRANE.

CASH ABSTRACT FOR THE YEAR 1915.

Receipts.

Taxes—		
Arrears	$6,175 01	
Current	21,607 35	
Interest	124 44	
		$27,906 80

Tax Sale Redemptions		355 87
Water Rates		2,983 74
Waterworks Extension, Capital Account		1,000 00
Cemetery Lot Sales		16 00
Liquor License Fund		390 00
Gravel Sold		89 00
School Debentures Sold—		
Principal	$30,486 50	
Interest	519 82	
		31,006 32
School Debenture Savings Account Transfer—		
Deposits	$12,322 29	
Bank Interest	44 46	
		12,366 75
School Debenture Interest Savings Account Transfer		2,580 00
School Government Grant		82 00
Jail Building Savings Account Transfer—		
Balance, 1st January	$3,787 35	
Bank Interest	71 53	
		3,858 88
Hospital Building Savings Account Transfer—		
Balance, 1st January	$9,077 47	
Bank Interest	103 53	
		9,181 00
Police Department—		
Fines	$413 75	
Fees	267 85	
1914 Advances Returned	136 90	
1915 Advances Returned	166 00	
		984 50
Licenses—		
Dog	$156 00	
Soft Drinks	120 00	
Restaurant	45 00	
Tobacco	285 00	
Carters	23 00	
Pool	65 00	
Laundry	10 00	
Milk	5 00	
Employment	20 00	
Auctioneers	20 00	
Theatre	30 00	
		779 00
Miscellaneous—		
Donations	$75 00	
Gregory & Greek (lost cheque)	240 93	
Sundries	67 75	
		383 68
Total Receipts		$93,963 54
Bank Balance, 1st January, 1915	$2,531 94	
Plus Outstanding Cheques Recredited (See Auditor's Report for 1914.)	321 71	
		2,853 65
Bank Overdraft, 31st December, 1915		5,636 87
		$102,454 06

TOWN OF COCHRANE.

Cash Abstract for the Year 1915.

Payments.

Salaries—		
Police Department	$1,044 25	
Water Works Department	600 00	

Board of Health	200 00	
Scavenging Department	944 40	
Town Foreman	1,020 00	
General	2,390 72	
		$6,199 37
Printing and Advertising		427 00
Insurance		476 21
Interest to Bank		204 29
Public School—		
On Requisition	$4,553 16	
Government Grant	82 00	
		4,635 16
Separate School		3,229 37
Fire Department—		
Salaries	$540 50	
Equipment	356 73	
Maintenance	133 80	
		1,031 03
Maintenance, Roads, Bridges and Sidewalks		657 80
Maintenance of Water Works and Sewers—		
Water Works	$500 00	
Sewers	164 61	
		664 41
Capital Lxpenditure Provided by By-law No. 134—		
Water Main to Hospital	$800 35	
Water Main to Public School	272 07	
Sewer to Public School	295 07	
Water Works Pump	150 00	
Well Driving	1,436 96	
Sewer Improvements	316 25	
		3,270 70
Jail and Town Hall Building and Equipment		4,421 99
New Cemetery Improvement		453 70
Old Cemetery Removal		672 00
Debentures—		
Principal Redeemed	$5,459 10	
Interest Paid	8,471 54	
		13,930 64
Office Expenses		119 72
Park Improvement		65 95
Gravel Pit Improvement		55 90
Charity		310 71
Wood Cutting		85 15
Refund Tax Sale Money		198 81
School Debenture Interest Deposited		2,619 82
School Debenture Proceeds Paid to Board		31,427 42
School Debenture Proceeds Deposited in Savings Account		12,322 29
Hospital Building Fund Paid to Trustees		9,181 00
Election Expenses		18 00
Fuel		113 50
Rent		158 00
Water Frontage Refunds		124 97
Electric Power—		
Water Pumping	$2,407 55	
Street Lighting, etc.	1,106 19	
		3,513 74
Board of Health		131 18
Law Costs		22 81
Gregory & Greek (lost cheque)		240 93
Grants		635 00
Miscellaneous		296 44
Police Department—		
Maintenance	$184 70	
Advances	306 80	
		491 50
Town Hall—Repairs		47 55
		$102,454 06

TOWN OF COCHRANE.

Detailed Statement of Receipts.

Arrears of Taxes—			
T. Portland		$3,386 65	
Treasurer		2,788 36	
			$6,175 01
Interest on Taxes—			
Treasurer			124 44
1915 Tax Collections			21,607 35
Water Rates—			
Regular Service Connections		$2,362 74	
Tap Collections		121 00	
			2,983 74
Tax Sale Redemptions—			
Nov. 26	T.N.O. Railway, per P. J. Foley, Redemption of Lot 353 and Costs	$57 76	
	T.N.O. Railway, per P. J. Foley, Redemption of Lot 354 and Costs	57 76	
	T.N.O. Railway, per P. J. Foley, Redemption of Lot 156 and Costs	88 84	
Dec. 27	T.N.O. Railway, Redemption of Lot 206 and Costs	64 10	
	T.N.O. Railway, Redemption of Lot 269 and Costs	87 41	
			355 87
Water Works Extension—			
Dec. 15	Cochrane General Hospital, contribution towards cost of installation of water to hospital		1,000 00
Cemetery—			
Dec. 9	Geo. Switzer, purchase price of Cemetery Lot	$8 00	
" 20	Mrs. Minnie Warner, purchase price of Cemetery Lot 308	8 00	
			16 00
Forward			$32,262 41

TOWN OF COCHRANE.

Detailed Statement of Receipts.

Licenses.

Dog—	
P. W. Hancock	$2 00
H. Conn	2 00
A. Sorgat	2 00
M. Silverstone	2 00
A. Slater	2 00
R. Gauthier	2 00
W. S. Carter	2 00
N. Fassano	2 00
S. J. Mackey	2 00
G. Barlow	2 00
J. Trudel	2 00
J. Trudel	2 00
J. Pawson	2 00
A. McDonald	2 00
A. McDonald	2 00
W. Rhodes	2 00
D. Gauthier	2 00
J. Smith	2 00
S. J. Dempsay	2 00
S. Buran	2 00
E. Hobson	2 00
W. Harmer	2 00
Father Larocque	2 00
E. Drake	2 00

F. C. Ivy	2 00	
C. Hamilton	2 00	
E. Tichnoff	2 00	
M. Henry	2 00	
S. G. Holditch	2 00	
R. Caswell	2 00	
R. Anderson	2 00	
W. H. Peterson	2 00	
D. Jamieson	2 00	
C. Dunn	2 00	
B. Cusson	2 00	
W. Featherstonhaugh	2 00	
H. Rothschild	2 00	
C. Sherwood	2 00	
C. Sherwood	2 00	
S. Claremont	2 00	
A. Moth	2 00	
C. Young	2 00	
C. Kewalski	2 00	
J. A. Stewart	2 00	
Mr. Jacco	2 00	
W. J. Boyd	2 00	
D. Revels	2 00	
E. Robertson	2 00	
F. Piccolo	2 00	
S. A. Jones	2 00	
G. Hennessey	2 00	
N. Berthianne	2 00	
R. Williams	2 00	
G. Bishop	2 00	
G. H. Clemes	2 00	
C. Kewalski	2 00	
H. Thompson	2 00	
A. Hardman	2 00	
J. E. Gooding	2 00	
A. Sebastien	2 00	
C. J. Dix	2 00	
O. Lalonde	2 00	
A. Desjardins	2 00	
Dr. Cameron	2 00	
A. Morrissette	2 00	
H. Waldron	2 00	
		132 00

Bitch—

W. P. Olton	$4 00	
B. Rothschild	4 00	
S. J. Dempsay	4 00	
D. Bernard	4 00	
N. Montgomery	4 00	
M. J. Roche	4 00	
		24 00

Soft Drinks—

M. Shinoski	$10 00	
P. Mahara	10 00	
N. Danoluk	10 00	
C. Barley	10 00	
N. Fassano	10 00	
M. Gervais	10 00	
E. Tichnoff	10 00	
S. Elias	10 00	
E. Joseph	10 00	
E. Bennett	10 00	
S. Buran	10 00	
Civic Holiday Com.	10 00	
		120 00

Restaurant—		
G. Jamieson	$5 00	
C. Barley	5 00	
M. Gervais	5 00	
S. Elias	5 00	
E. Joseph	5 00	
C. Fong	5 00	
King George Cafe	5 00	
Union Cafe	5 00	
Civic Holiday Com.	5 00	
		45 00
Tobacco—		
J. Palangio (Cigarette)	$25 00	
D. Kertzer	10 00	
Carter Drug Store	10 00	
Revillon Freres	10 00	
N. Fassano	10 00	
C. Barley	10 00	
S. J. Mackey	10 00	
O. Lalonde	10 00	
E. Tichnoff	10 00	
Queen's Hotel	10 00	
J. Palangio	10 00	
E. M. Hobson	10 00	
Hudson Bay Company	10 00	
R. Gauthier	10 00	
A. Vallee	10 00	
S. Elias	10 00	
M. Gervais	10 00	
F. Miralles	10 00	
E. Bennett	10 00	
G. Warrell	10 00	
L. Boivin	10 00	
J. Perkus & Co.	10 00	
Grand Union	10 00	
S. Buran	10 00	
Civic Holiday Com.	10 00	
S. Leger	10 00	
E. Joseph	10 00	
		285 00
Carters—		
R. Armstrong	$5 00	
C. E. Smith	5 00	
McPhee & Gardner	5 00	
M. Henry	5 00	
G. Mattson	3 00	
		23 00
Pool—		
H. Rothschild	$15 00	
G. Ibbitson	25 00	
P. Murphy	25 00	
		65 00
Laundry—		
Cochrane Steam Laundry	$5 00	
Jung Lee	5 00	
		10 00
Milk—		
A. Broullard	$1 00	
N. Berthianne	1 00	
J. Bradette	1 00	
O. Jorgenson	1 00	
W. Chalmers	1 00	
		5 00

Employment—		
J. Perkus & Company	$10 00	
A. K. Chamandy	10 00	
		20 00
Auctioneer—		
Jno. Clark	$10 00	
E. A. Cottrell	10 00	
		20 00
Theatre—		
W. H. Warke		30 00
Forward		$33,041 41

TOWN OF COCHRANE.

Detailed Statement of Receipts.

Gravel.

Apr. 26	J. E. Gooding (20 yards)	$5 00	
May 21	Father LaRocque (4 yards)	1 00	
June 16	" " (5 yards)	1 25	
" 18	L. Boivin (8 yards)	2 00	
" 24	E. Drake (1 yard)	25	
" 25	D. Smith (1 yard)	25	
" 29	L. Warrell (1 yard)	25	
Aug. 14	W. H. Rhodes (1 yard)	25	
Sept. 27	S. Court (2 yards)	50	
Dec. 22	Van Russel Bros.	66 25	
" 27	W. G. Hunt	12 00	
			89 00

Debentures.

Mar. 5	Wood, Gundy & Co., Public School Deb. at 95	$11,254 10	
Apr. 9	" " " "	3,406 25	
" 10	" " " "	6,104 75	
May 25	" " " "	4,750 00	
	" " " "	2,796 92	
July 2	" " " "	958 12	
Aug. 30	" " " "	950 00	
Oct. 30	" " " "	266 36	
			30,486 50

Accrued Interest on Public School Debentures.

Mar. 5	Wood, Gundy & Co.	$116 73	
Apr. 9	" "	55 98	
" 10	" "	101 40	
May 25	" "	102 74	
	" "	64 36	
July 2	" "	29 68	
Aug. 30	" "	35 17	
Oct. 30	" "	13 76	
			519 82

School Grant.

Aug. 30	Provincial Treasurer (P.S. grant)	82 00

Liquor License Fund.

June 16	W. S. Blackwell (Insp.)	390 00

Jail Account.

July 22	Transferred from Savings Account to General Funds.	$3,750 00	
	Accrued interest on same	108 88	
			3,858 88

Hospital.

Apr. 19	Transferred from Savings Account to General Account	$9,055 17	
	Accrued interest on same	125 83	
			9,181 00

Public School.

Apr. 19	Transferred from Public School Debenture Savings Account to General Funds.		
	Deposit of March 5, sale to Wood, Gundy	$11,254 10	
	" " Accrued interest on same...	116 73	
	Savings interest accrued on deposits	44 46	
	Public School Debenture No. 1	951 46	
			$12,366 75
Dec. 31	Transfer of Public School Debenture Interest—Savings Account to General Fund		2,580 00

Miscellaneous.

Mar. 26	Wm. Young, payment on account of tax shortage....	$15 00	
Apr. 6	W. McD. Douglas, motion blanks	1 00	
May 13	Women's Institute, donation for Park Imp.	50 00	
July 22	Gregory & Greek, payment of lost cheque	240 93	
Aug. 2	Twp. Tisdale, payment of Firemen's Exp., 1914	8 75	
Dec. 6	Cochrane Board of Trade, donation for furniture....	25 00	
" 7	Geo. Warrell, proceeds of 10 cords of pulp	41 00	
" 15	V. Eloy, pound fee	2 00	
			$383 68

Police Department.

Fines—			
S. J. Dempsay, Magistrate	—January	$166 75	
A. T. H. Taylor	— "	2 00	
S. J. Dempsay	—March	142 00	
" "	—June	24 00	
" "	—November	24 00	
" "	—December	55 00	
			413 75
Fees—			
T. Portland	—January	$5 25	
"	—February	64 90	
"	—March	25 65	
V. Eloy	—March	20 00	
"	—April	20 00	
"	—May	20 00	
"	—June	10 00	
"	—July	29 20	
"	—August	10 00	
"	—September	20 00	
"	—October	21 90	
"	—November	10 00	
"	—December	10 95	
			267 85

Advances Returned (*re* Cost of Prisoners)—		
District Treasurer—March	$98 00	
" " —April	34 60	
" " July	34 30	
" " October	136 00	
		302 90
Total Receipts		$93,963 54

TOWN OF COCHRANE.

Detailed Statement of Disbursements.

Salaries and Allowances.

J. R. Wilkinson, balance due on December salary as Constable		$5 75
T. Portland, salary as Chief (Jan., $90.00; Feb., $100.00)		190 00
V. Eloy, salary as Constable to April 30 at $60.00	$248 50	
" " " May 1 to Nov. 30 at $80.00	560 00	
" " " Dec. 1 to 15	40 00	
		848 50
E. Caswell, salary as Town Foreman at $85.00 per month		1,020 00
H. J. Brown, salary as Clerk and Treasurer at $83.33 per month		1,000 00
J. Rose, salary as Scavenger at $83.33 per month		944 40
S. A. Jones, Town Solicitor at $33.33 per month		333 30
H. F. Hampton, salary as Pumpman at $50.00 per month		600 00
E. G. Vernon, salary as Medical Officer of Health, 6 mos.		100 00
Dr. Cameron, salary as Medical Officer of Health, 6 mos.		100 00
Jno. Clark, salary as Assessor		225 00
T. Portland, commission on 1914 Tax Collections		237 40
P. J. Foley, commission on 1914 Tax Collections		53 07
Henry Glover, fee for Provincial Municipal Audit		318 95
M. Young, salary while as Clerk and Treasurer		48 00
G. Lawson, Collector, on account of salary, $400.00		175 00
		$6,199 37

Printing and Advertising.

Jan. 21	*Northland Post*, Treasurer's Statement	$89 95	
Feb. 6	" " Printing, etc.	12 85	
" 20	J. Doust, Stationery	11 50	
	Municipal World, Ltd., Stationery	15 46	
Mar. 6	" " "	8 40	
" 20	Southam Press, Printing Public School Debentures	55 00	
Apr. 16	*Northland Post*, Printing	1 50	
May 22	" "	4 25	
June 12	Claybelt Pub. Co., Printing	17 35	
	Northland Post, Printing	21 30	
July 17	" "	3 50	
	Municipal World, Ltd., Stationery	17 26	
Sept. 4	*Northland Post*, Printing, etc.	16 90	
	" " Voters' List, etc.	62 10	
Oct. 2	" " Printing, etc.	15 70	
	Claybelt Pub. Co., Printing, etc.	9 70	
Nov. 6	*Northland Post*, Printing, etc.	14 95	
	Engineering News, Advertising	9 00	
Dec. 4	J. Doust, Stationery	5 30	
	Municipal World, Stationery	9 62	
	Cobalt Nugget, Printing	4 41	
	Claybelt Pub. Co., Limited	15 40	
" 11	*Cochrane Northland Post*, Ltd., Printing	4 10	
			427 06

Insurance.

Feb. 20	S. L. Bradley, insurance on portion of Municipal Buildings	$78 01	
	P. J. Foley, insurance on portion of Municipal Bldgs.	90 53	
Mar. 8	Union Assurance Company	86 90	
" 20	Ocean Accident Assurance Company, renewal premium on Treasurer's Bond	20 00	
" 27	Bank of Ottawa, insurance on Debentures in transit	2 00	
Oct. 2	Gen. Accident Assurance Co., Firemen's Policy	75 00	
Nov. 6	W. McD. Douglas, premium on new Town Hall	42 77	
	P. J. Foley, " "	40 50	
	S. L. Bradley, " "	40 50	
			476 21

Interest.

Bank of Ottawa,	Interest on Overdraft—January	$12 65	
" " "	—February	10 00	
" " "	—March	8 60	
" " "	—April	10 55	
" " "	—May	18 70	
" " "	—June	23 74	
" " "	—July	28 80	
" " "	—August	26 15	
" " "	—September	16 45	
" " "	—October	1 65	
" " "	—November	14 45	
" " "	—December	32 55	
			204 29

Public School.

Treasurer Public School Board	—January	$600 00	
" " "	—February	500 00	
" " "	—March	500 00	
" " "	—April	500 00	
" " "	—May	300 00	
" " "	—June	400 00	
" " "	—September	400 00	
" " "	—September (Grant)	82 00	
" " "	—October	400 00	
" " "	—November	400 00	
" " "	—December	553 16	
			4,635 16

Separate School.

Treasurer, Separate School Board	—November	$250 00	
" " "	—February	300 00	
" " "	—May	486 54	
" " "	—December	2,192 83	
			3,229 37

Fire Department.

Pay Rolls—		
December, 1914	$23 00	
January, 1915	34 75	
February, 1915	88 25	
March, 1915	32 25	
April, 1915	59 50	
May, 1915	13 00	
June and July	41 00	
August and September	20 00	
October and November	228 75	
		540 50

Amounts Paid Individual Firemen from above Pay Rolls—

G. Barlow, Chief	$70 50
F. Clark	38 00
H. Pearce	6 75
F. C. Ivy	37 25
J. Gooding	16 00
P. Murphy	15 25
J. Rose	5 75
J. Gauthier	38 00
C. A. MacLeod	30 25
G. Boyce	12 50
W. Imber	36 00
J. Douglas	13 50
W. Bonnah, team	5 00
M. Henry, team	40 00
E. Pawson, team	5 00
J. Lacroix, team	2 50
Taylor Hardware Company, team	5 00
McPhee & Gardner, team	5 00
G. Matteson, team	5 00
S. Smith	9 50
A. Tyneck	2 00
G. Lawson	2 00
J. Pawson	2 00
A. G. Kydd	2 00
J. Wilkinson	18 25
A. Woolley	22 00
A. Solmonson	20 75
E. Hilliard	3 00
E. Aleson	15 25
F. Ainsworth	10 50
H. J. Ward	31 75
D. Gamelin	4 25
A. Sorgat	2 00
G. Allen	2 00
R. Charleck	6 00
	$540 50

Equipment—

Jan.	21	Knight Bros., Ltd., lumber for sleigh	$3 65
Feb.	6	Dunlop Tire & Rubber Goods Co., expanding tools and boots	47 98
"	20	H. J. Ward, alarm system	10 50
Aug.	7	Taylor Hardware Company, hose, etc.	133 70
		Frank Childs, hose, etc.	132 90
Sept.	4	Ward & Ainsworth, alarm system	16 00
Dec.	4	E. Caswell, fire sleigh	12 00
			356 73

Maintenance—

Jan.	21	Taylor Hardware Company, supplies	$2 65
Feb.	6	J. Gauthier, repairs	16 70
		McPhee & Gardner, labor per pay roll	1 50
	"	Imber & Sutton, repairs	3 40
Mar.	20	Geo. Warrell, soda	10
Apr.	16	H. J. Ward, repairs alarm system	1 00
		Taylor Hardware Company, cells, etc.	2 10
May	8	H. J. Ware, wiring	3 15
		Taylor Hardware Company, packing, etc.	5 45
		Frank Childs, bell clapper, etc.	5 95
		Jamieson Meat Company, broom	40
		D. Rose, labor per Town Pay Roll	6 95
		E. Drake, labor per Town Pay Roll	2 62
		E. Guppey, labor per Town Pay Roll	90
		W. Gardner, labor per Town Pay Roll	3 00
"	22	H. J. Ward, electrical work	1 00

June	12	C. Dix, repairs	2 45	
		Taylor Hardware Company, supplies	1 40	
July	17	H. J. Ward, electrical work	2 00	
		Taylor Hardware Company, supplies	1 10	
Aug.	7	R. Brooks, labor per Town Pay Roll	1 50	
		J. Beadman, labor per Town Pay Roll	1 50	
Sept.	4	P. Brooks, labor per Town Pay Roll	3 50	
		N. Berthianne, labor per Town Pay Roll	45	
		F. Rice, labor per Town Pay Roll	1 50	
Oct.	2	Taylor Hardware Company, supplies	1 75	
"	4	J. Beadman, labor per Town Pay Roll	5 40	
		W. Bonnah, labor per Town Pay Roll	1 20	
		C. Matthews, labor per Town Pay Roll	5 00	
Nov.	6	Frank Childs, supplies	1 60	
		H. J. Ward, electrical work	1 65	
Dec.	4	E. Drake, labor per Town Pay Roll	4 50	
		J. Beadman, labor per Town Pay Roll	5 50	
"	10	Cochrane Telephone Company, Barlow 'phone	10 00	
		Knight Bros., lumber for repairs	14 63	
		J. Gauthier, repairs	2 50	
"	11	Wards & Ainsworth, repair of alarm	7 80	
				133 80

TOWN OF COCHRANE.

Detailed Statement of Disbursements.

Maintenance.

Roads, Bridges and Sidewalks—

Jan.	21	McPhee & Gardner, labor, per pay roll	$1 50
Feb.	6	J. Rose, labor, per pay roll	8 50
		McPhee & Gardner, labor, per pay roll	4 50
	20	T. N. O. Commission, gravel	195 20
Mar.	6	E. Drake, labor, per pay roll	6 00
		W. Gardner, labor, per pay roll	5 00
May	8	E. Drake, labor, per pay roll	6 30
		M. Henry, labor, per pay roll	4 80
		C. E. Smith, labor, per pay roll	17 40
		W. Bonnah, labor, per pay roll	2 63
June	12	J. Gauthier, repairs	4 80
		M. Henry, labor, per pay roll	21 00
		W. Gardner, labor, per pay roll	30 00
		W. Bonnah, labor, per pay roll	5 30
		D. Rose, labor, per pay roll	2 65
		J. Beadman, labor, per pay roll	1 50
	19	S. Wolchuk, labor, per pay roll	2 40
July	13	A. Valle, lumber for sidewalks	15 30
		M. Henry, labor, per pay roll	5 00
		W. Gardner, labor, per pay roll	2 45
		F. Carino, labor, per pay roll	1 00
		O. Derouin, labor, per pay roll	1 50
		F. Brooks, labor, per pay roll	1 50
		H. Pawson, labor, per pay roll	2 00
		R. Nixon, labor, per pay roll	2 50
	17	K. Beilek, ditching	75 00
Aug.	7	R. Brooks, labor, per pay roll	18 00
		P. Brooks, labor, per pay roll	6 00
		J. Beadman, labor, per pay roll	2 00
		H. West, labor, per pay roll	2 00
		W. Early, labor, per pay roll	75
	28	F. Cohen, labor, per pay roll	2 55
Sept.	1	J. Beadman, labor, per pay roll	6 00
		P. Brooks, labor, per pay roll	9 00
		F. Carino, labor, per pay roll	95
		W. Gardner, labor, per pay roll	28 80
		M. Henry, labor, per pay roll	9 00

Sept.	1	E. Pawson, labor, per pay roll	$31 20	
		O. Lalonde, labor, per pay roll	18 00	
		B. Ludella, labor, per pay roll	3 35	
		F. Pine, labor, per pay roll	3 35	
		F. Sindra, labor, per pay roll	3 35	
		J. Halmack, labor, per pay roll	4 00	
		J. A. Carter, labor, per pay roll	4 50	
		F. Aleman, labor, per pay roll	3 35	
	28	J. Savard, labor, per pay roll	2 25	
Oct.	2	A. Vallee, lumber for sidewalks	15 72	
		Taylor Hardware Co., supplies	6 50	
		J. Sandro, labor per pay roll	3 00	
Nov.	6	A. Vallee, lumber	14 15	
		Wilson Bros., repairs	1 60	
		J. Sandro, labor, per pay roll	3 20	
		J. Beadman, labor, per pay roll	12 00	
		E. Drake, labor, per pay roll	6 00	
	18	H. Grasser, labor, per pay roll	1 50	
Dec.	4	E. Drake, labor, per pay roll	2 00	
		J. Beadman, labor, per pay roll	8 00	
				657 80

Waterworks—

Jan.	21	S. J. Mackey, saltpetre	$5 00	
		F. Child, supplies, pump house	4 90	
		E. Drake, labor, per pay roll	2 00	
		G. Grasser, labor, per pay roll	4 00	
		McPhee & Gardner, labor, per pay roll	15 00	
Feb.	3	T. Cole, labor	2 50	
	6	Cochrane Telephone Co., pump house phone	15 00	
		Knight Bros., lumber for dam at lake	12 00	
		G. Grasser, labor, per pay roll	2 00	
		McPhee & Gardner, labor, per pay roll	4 20	
	9	P. Palon, labor, per pay roll	4 50	
	11	T. Cole, labor, per pay roll	3 00	
Mar.	6	E. Drake, labor, per pay roll	7 40	
		W. Gardner, labor, per pay roll	5 00	
		F. Child, supplies	15	
April	16	Taylor Hardware Co., supplies	90	
May	8	D. Rose, labor, per pay roll	6 00	
	22	C. Giles, repairing pipe into tank	165 00	
June	5	T. Cole, labor	4 00	
	7	J. Bernatchez, labor	1 75	
	12	M. Henry, labor, per pay roll	6 00	
		N. Berthianne, labor, per pay roll	1 80	
	19	H. J. Ward, electrical work *re* tank	3 80	
		W. Carriere, town's share of water connection	2 45	
July	3	F. Child, supplies	10 98	
		Geo. Warrell, soda	05	
		J. Beadman, labor, per pay roll	3 00	
		J. Bernatchez, labor, per pay roll	3 85	
		N. Berthianne, labor, per pay roll	75	
	17	F. Childs, supplies	75	
Sept.	4	J. Beadman, labor, per pay roll	4 00	
		P. Brooks, labor, per pay roll	4 00	
		F. Child, supplies	13 72	
	14	J. C. Levesque, town's share of water connection	2 45	
	22	J. Almack, labor, per pay roll	1 50	
Oct.	2	E. Caswell, freight	3 73	
		Taylor Hardware Co., supplies	1 25	
		Empire Mfg. Co., supplies	40 89	
	4	J. Sandro, labor, per pay roll	8 00	
		E. Pawson, labor, per pay roll	5 40	
		F. Carino, labor, per pay roll	3 00	
	9	J. Mancusa, labor, per pay roll	3 00	
Nov.	6	H. Mueller Mfg. Co., supplies	6 49	
		F. Child, supplies	31 73	
		J. Gauthier, repairs	5 70	
		Kerr Engine Co., supplies	36 90	

Nov.	6	Taylor Hardware Co., supplies	$12 50	
		L. Boivin, stove for pump house	6 00	
		Wilson Bros., repairs	7 20	
		J. Sandro, labor, per pay roll	16 00	
		M. Henry, labor, per pay roll	24 00	
		J. Beadman, labor, per pay roll	7 20	
		E. Drake, labor, per pay roll	6 00	
	22	C. Matthews, labor, per pay roll	8 00	
Dec.	4	E. Drake, labor, per pay roll	18 00	
		M. Henry, labor, per pay roll	35 60	
		W. Chalmers, labor, per pay roll	2 00	
		B. McIntosh, labor, per pay roll	1 00	
		K. Beilek, labor, per pay roll	2 00	
		Empire Mfg. Co., supplies	6 29	
	11	Empire Mfg. Co., supplies	7 70	
		F. A. Child, hardware supplies	13 20	
		Taylor Hardware Co., supplies	22 23	
				$108 02

Waterworks to Hospital.

Aug.	7	R. Brooks, labor *re* survey	$1 50	
		J. Beadman, labor, per pay roll	1 50	
Oct.	4	W. Gardner, carting	8 00	
		M. Henry, carting	3 00	
Nov.	1	J. Livingston, labor, per pay roll	22 00	
	6	F. Childs, supplies	40 00	
		K. Beilek, ditching, etc., per contract	489 85	
		Taylor Hardware Co., supplies	15 00	
		Sutcliffe & Neelands portion of engineering	25 00	
		C. Matthews, labor, per pay roll	50 00	
	22	C. Matthews, labor, per pay roll	6 50	
		Kerr Engine Co., hydrants	138 00	
				800 35

Waterworks to Public School.

Nov.	6	H. Mueller Mfg. Co., supplies	$24 00	
		K. Beilek, ditching contract	131 50	
		Sutcliffe & Neelands, engineering	12 50	
		C. Matthews, labor, per pay roll	44 35	
Dec.	4	Kerr Engine Co., hydrant	46 00	
Oct.	4	J. Manoss, carting	6 00	
	13	Canadian Express Co., express on valve	7 72	
				272 07

Sewer to Public School.

Sept.	25	T. N. O. Railway, freight on tile	$40 32	
Nov.	6	A. Vallée, lumber	13 00	
		Knight Bros., material	4 95	
		K. Beilek, ditching contract	155 15	
		Sutcliffe & Neelands, engineering	12 50	
		C. Mathews, labor, per pay roll	15 00	
		J. Sandro, labor, per pay roll	3 00	
Dec.	4	Dominion Sewer Pipe Co., tile	46 80	
Oct.	4	T. Rodies, carting	4 35	
				295 07

Waterworks Capital Expenditure.

Nov.	6	Northern Ontario Light & Power Co., payment of share of cost of pump	150 00

Town Hall Repairs.

Dec.	22	C. Giles, repairing furnace	47 55

Driving New Wells, Spring Lake.

Oct.	13	T. N. O. Railway, freight on well driver, etc.	$32 00	
	19	T. N. O. Railway, freight on material	8 08	
		T. N. O. Railway, freight on material	26 28	
Nov.	6	Knight Bros., supplies	5 80	
		J. Sutton, repairs	4 70	
		Warrell & Son, lumber for staging	34 47	
		L. Boivin, wood for engine	3 00	
		J. Sandro, labor, per pay roll	3 00	
		W. Gardner, labor, per pay roll	14 40	
		S. Court, labor, per pay roll	6 00	
		Knight Bros., labor, per pay roll	7 20	
	19	T. N. O. Railway, freight on well driver, pipes, etc.	41 45	
	22	C. Mathews, labor, per pay roll	15 50	
Dec.	4	E. Drake, labor, per pay roll	11 00	
		M. Henry, labor, per pay roll	10 00	
		Knight Bros., labor, per pay roll	18 00	
		Geo. King, contractor, labor on wells	627 20	
		Wabi Iron Works, well points	136 00	
		Northern Canada Supply, well pipes	161 50	
		Oil Wells Supply Co., well pipes	235 68	
		Knight Bros., lumber	2 00	
	11	L. Boivin, wood for engine	4 00	
		Taylor Hardware Co., supplies	29 70	
				1,436 96

Improving Sewer Outlet.

Aug.	7	R. Brooks, labor, per pay roll	$1 50	
		J. Beadman, labor, per pay roll	1 50	
		W. Gardner, labor, per pay roll	3 00	
Sept.	4	J. Beadman, labor, per pay roll	3 95	
		W. Smith, labor, per pay roll	7 50	
		J. Halmack, labor, per pay roll	1 85	
		J. A. Carter, labor, per pay roll	2 85	
		S. Celestino, labor, per pay roll	2 10	
		A. Morell, labor, per pay roll	6 00	
		A. Cordella, labor, per pay roll	8 85	
	8	T. Ripall, labor, per pay roll	9 75	
	11	J. A. Carter, labor, per pay roll	12 45	
	13	G. Cochinie, labor, per pay roll	5 25	
		J. Merolla, labor, per pay roll (order)	4 50	
	15	H. Batchuke, labor, per pay roll	4 80	
		B. Barchuke, labor, per pay roll	4 80	
		N. Bidell, labor, per pay roll	17 55	
		J. Sandro, labor, per pay roll	19 20	
		G. Cicie, labor, per pay roll	16 95	
		S. Cordella, labor, per pay roll	15 45	
		T. Ramodies, labor, per pay roll	14 85	
		S. Savard, labor, per pay roll	14 25	
		S. Morado, labor, per pay roll	13 95	
		C. Tomach, labor, per pay roll	16 05	
		S. Colarado, labor, per pay roll	17 55	
		C. Manjo, labor, per pay roll	16 20	
	17	F. Piccolo, labor, per pay roll (order)	14 25	
	18	S. Shentriel, labor, per pay roll	12 45	
		J. Reitch, labor, per pay roll	13 95	
Oct.	2	P. Brooks, labor, per pay roll	10 50	
		W. Smith, labor, per pay roll	1 50	
	4	J. Sandro, labor, per pay roll	4 75	
		J. Beadman, labor, per pay roll	4 50	
		J. Beadman, Jr., labor, per pay roll	3 00	
		A. Greatto, labor, per pay roll	8 70	
				316 25

New Town Hall and Jail.

June 23	M. Canassie, labor per Pay Roll	$0 75	
July 1	A. Slater, labor per Pay Roll	1 80	
" 3	F. Carino, labor per Pay Roll	4 25	
	O. Derouin, labor per Pay Roll	7 95	
	R. Brooks, labor per Pay Roll	1 50	
	B. McIntosh, labor per Pay Roll	1 80	
" 17	Van Rassel Bros., on account of contract	440 00	
Aug. 7	Van Rassel Bros., on account of contract	209 60	
	J. & J. Taylor, vault door handle and lock	11 60	
Sept. 4	J. Beadman, labor per Pay Roll	4 50	
	P. Brooks, labor per Pay Roll	4 50	
	H. Barchuke, labor per Pay Roll	1 20	
	P. Barchuke, labor per Pay Roll	1 20	
	F. Carino, labor per Pay Roll	4 00	
	Wilson Bros., repairs	63 25	
Aug. 21	Van Rassel Bros., on account of contract	549 60	
Sept. 4	" " " "	814 40	
" 21	" " " "	760 80	
Oct. 2	" " " "	425 00	
	Taylor Hardware Company, supplies	21 30	
" 16	Ward & Ainsworth, wiring	18 80	
Nov. 6	Harmer & Durack, shades	3 00	
	Knight Bros., lumber	4 15	
	Wilson Bros., cell repairs	73 66	
" 30	Van Rassel Bros., balance on contract, plus extra of $20.00	820 60	
Dec. 3	Ward & Ainsworth, electrical work	25 00	
" 4	Van Rassel Bros., extra work on vault	8 00	
	Wilson Bros., repairs on vault, etc.	28 30	
	J. Williams, inspection	50 00	
	Harmer & Durack, shades	10 50	
" 11	E. M. Hobson, Ward & Ainsworth order, wiring	35 10	
	F. A. Child, rubber treads and mat	15 88	
			4,421 99

Cemetery.

Oct. 4	J. Beadman, labor per Town Pay Roll	$6 00	
	W. Gardner, labor per Town Pay Roll	28 00	
	J. A. Carter, labor per Town Pay Roll	45	
	M. Henry, labor per Town Pay Roll	16 20	
" 6	F. Lamine, labor per Town Pay Roll	1 50	
" 9	J. Houle, labor per Town Pay Roll	2 70	
	Geo. Boucher, labor per Town Pay Roll	2 70	
" 23	Master of Titles, registration fee	8 50	
Nov. 6	Taylor Hardware Company, powder, etc.	8 00	
	F. Rodies, labor per Pay Roll	3 00	
	W. Gardner, labor per Pay Roll	12 00	
	M. Henry, labor per Pay Roll	9 60	
" 16	H. C. Sewell, on account of survey	150 00	
" 22	C. Mathews, labor	2 00	
Dec. 4	J. Berdett, labor	3 00	
	Sutcliffe & Neelands, survey	44 05	
	W. Gardner, labor per Pay Roll	6 00	
Dec. 27	H. C. Sewell, balance on survey	150 00	
			453 70

Removal of Old Cemetery.

Nov. 24	F. W. Garbutt, on account of contract, $5.50 per body	$15 00	
Dec. 4	" " " " "	8 50	
" 11	" " " " "	648 50	
			672 00

Debentures and Interest.

By-law No. 28—Principal paid		$1,618 74	
" 28—Interest paid		2,740 38	
" 19—Principal paid		858 05	
" 19—Interest paid		1,321 61	
" 104—Principal paid		611 65	
" 104—Interest paid		675 06	
" 104—Interest paid		656 71	
" 52—Principal paid		916 33	
" 52—Interest paid		1,699 21	
" 46—Principal paid		1,454 33	
" 46—Interest paid		1,378 57	
			13,930 64

Office Disbursements.

Feb. 20	H. J. Brown	$11 75	
Apr. 16	H. J. Brown	5 15	
May 8	Jno. Clark, Assessor	11 58	
June 12	H. J. Brown	13 55	
Aug. 7	H. J. Brown	12 80	
Sept. 21	Guy Lawson, Collector	28 91	
Nov. 1	H. J. Brown	20 00	
" 6	H. Pawson, carting	1 50	
Dec. 11	H. J. Brown	14 48	
			119 72

Improving Commando Lake Park.

June 5	T. Cole, labor	$3 00	
" 7	J. Bernatchez, labor	3 75	
" 12	J. Beadman, labor	3 00	
July 1	A. Slater, labor	3 00	
" 3	J. Beadman, labor	6 00	
	M. Henry, labor	7 00	
	W. Gardner, labor	1 75	
	R. Brooks, labor	1 50	
	F. Brooks, labor	3 00	
	J. Haggard, labor	75	
	H. Pawson, labor	4 00	
" 15	O. Lalonde, grass seed	2 95	
" 31	F. Rice, labor	5 25	
Aug. 1	F. Brooks, labor	3 00	
	J. Beadman, labor	6 00	
	J. Beadman, Jr., labor	6 00	
	H. West, labor	6 00	
			65 95

Improving Gravel Pit.

June 12	M. Henry, labor	$12 00	
	W. Gardner, labor	12 00	
	W. Bonnah, labor	8 55	
	A. Vallee, labor (order)	8 60	
	A. Vallee, labor (order)	8 75	
July 3	M. Henry, labor	3 00	
	W. Gardner, labor	3 00	
			55 90

Charity.

Jan. 18	T.N.O. Railway, railway fares *re* McCooye	$11 00	
" 21	J. Phillips, wood for Mrs. Coulas	2 50	
	E. M. Hobson, supplies for Mrs. Coulas	4 55	
	E. M. Hobson, supplies for T. Cole, covered by work...	27 95	
	E. M. Hobson, supplies for Henry Brown, covered by work . . .	6 15	

Jan. 21	S. Leger, supplies for Mrs. Coulas	19 35	
	Queen's Hotel, board *re* McCooye	4 50	
	H. J. Brown, payment of ticket *re* Italian to North Bay	6 30	
Mar. 20	Geo. Warrell, supplies, Rasicot & Brown	9 38	
	S. Leger, supplies, Mrs. Coulas	5 87	
Apr. 16	Geo. Warrell, supplies, J. Nash	10 00	
	Geo. Warrell, supplies, H. Brown, covered by work	1 00	
May 22	S. Leger, supplies, J. Nash	4 00	
	S. Leger, supplies, T. Cole, covered by work	3 40	
	C.O.D. Meat Market, J. Nash, supplies	1 00	
" 29	Thos. Cole	3 00	
June 12	O. Lalonde, supplies, T. Cole, covered by work	5 00	
" 19	A. Duhaime, board of R. McDonald	10 00	
July 3	Geo. Warrell, supplies for H. Brown	3 40	
" 17	A. Duhaime, board of R. McDonald	20 00	
Sept. 4	A. Duhaime, board of R. McDonald	35 00	
" 21	Mrs. Wise, rebate of taxes	57 59	
Oct. 2	A. Duhaime, board of R. McDonald	20 00	
Nov. 6	A. Duhaime, board of R. McDonald	19 00	
	Alex. Brown, supplies for Mrs. Wing	10 77	
" 12	T.N.O. Railway, fare and expenses *re* R. McDonald	10 00	
			310 71

Cutting Wood.

Mar. 1	T. Cole, labor	$5 00	
" 4	J. Beadman, labor	13 15	
" 10	J. Albertson, labor	1 50	
" 12	T. Cole, labor	3 25	
	J. Beadman, labor	7 00	
" 27	J. Beadman, labor	10 00	
Apr. 3	A. Hickey, hauling wood to hall	21 00	
" 10	J. Beadman, labor	13 75	
May 8	C. E. Smith, hauling wood	7 50	
	Max Henry, hauling wood	3 00	
			85 15

Refunds of Tax Sale Moncy.

Dec. 4	A. David, purchase price, plus 15 per cent., *re* Lot 156	$86 99	
	L. Hurtibese, " " " " 353	55 91	
	S. L. Fournier, " " " " 354	55 91	
			198 81

Deposits of Accrucd Interest on Public School Debentures to Special Account.

Apr. 19	Transferred to Special Account, accrued interest	$2,374 11	
May 11	" " " "	102 74	
" 19	" " " "	64 36	
July 31	" " " "	29 68	
Aug. 7	" " " "	35 17	
Nov. 1	" " " "	13 76	
			2,619 82

Payments to Public School Board of Debenture Proceeds.

Apr. 19	Treasurer of School Board, proceeds to date, plus savings interest of $44.46, less cost of printing debentures, $55.00	$21,706 02	
May 11	Treasurer P. S. Board, proceeds of deb.	4,750 00	
" 19	" " " "	2,796 92	
July 3	" " " "	958 12	
Aug. 7	" " " "	950 00	
Nov. 1	" " " "	266 36	
			31,427 42

Transfers to Public School Debenture Account.

Mar. 6	Transferred to Special Account	$11,370 83	
" 20	Transferred to Special Account	951 46	
			12,322 29

Hospital Board.

Apr. 19	Cochrane General Hospital, payment of funds held in trust	9,181 00

Election Expenses.

Jan. 21	A. E. Mallette, D. R. Officer	$4 00	
	Guy Lawson, Poll Clerk	2 00	
	J. Geils, D.R.O.	4 00	
	R. Gauthier, Poll Clerk	2 00	
	C. A. McLeod, Constable	2 00	
Feb. 6	Father LaFerriers, Hall rent	4 00	
			18 00

Fuel.

Jan. 21	J. Phillips, wood for Fire Hall	$3 50	
	H. Pawson, coal for Fire Hall	15 75	
Feb. 6	Knight Bros., coal for Fire Hall	5 00	
	H. Pawson, wood for Fire Hall	15 75	
Mar. 6	H. Pawson, coal for Fire Hall	15 75	
Apr. 16	" " coal for Fire Hall	10 50	
May 8	" " coal for Fire Hall	5 25	
Nov. 6	" " coal for Town Hall	21 00	
Dec. 4	" " coal for Town Hall	21 00	
			113 50

Rent.

	George Warrell, office rent at $18.00 per month	158 00

Water Frontage Refunds, Etc.

Jan. 21	S. J. Dempsay, Water Frontage	$10 00	
Feb. 6	S. Buran, Water Frontage	2 80	
	W. P. Olton, Water Frontage	2 25	
	H. C. Corby (Overcharge on Assessment)	11 95	
Mar. 6	Baptist Church, Exemption	9 92	
Apr. 22	V. Eloy, Water Frontage, D. Anglade	2 40	
Sept. 21	J. C. Levesque, Water Frontage	2 80	
	Northern Ont. Light & Power Co., Frontage	26 80	
	Dalton Smith, Water Frontage	6 40	
	T. Fitzgerald, Water Frontage	12 00	
" 27	F. Miralles, Water Frontage	4 20	
Oct. 12	F. O'Kunkel, Water Frontage	3 00	
" 26	Hugh Campbell, Water Frontage	2 40	
Nov. 6	A. Wilson, Water Rate	1 50	
" 12	W. Webster, Water Frontage	75	
" 20	P. Thomas, Overcharge on Assessment	18 55	
Dec. 4	Mrs. P. McGregor, Frontage	5 00	
" 31	D. Eaton, Water Frontage	2 25	
			124 97

Electric Lighting and Pumping.

Northern Ontario Light & Power Co.—December, 1914, Account		$307 87
" " " —January, 1915, "		301 22
" " " —February, " "		298 62
" " " —March, " "		289 12
" " " —April, " "		287 42
" " " —May, " "		288 32

Northern Ontario Light & Power Co.—June					"	"	..	$289 62	
"	"	"	—July,		"	"	..	289 52	
"	"	"	—August,		"	"	..	290 42	
"	"	"	—September,		"	"	..	289 22	
"	"	"	—October,		"	"	..	287 52	
"	"	"	—November,		"	"	..	294 87	
									3,513 74

Pumping, $2,407.55; Street Lighting, $953.04; Lighting of Fire Hall, Town Hall and Pump House, $153.15.

Board of Health.

Jan. 21	A. Vallee, quarantine supplies, Savard	$22 21	
	Dr. Vernon, express	60	
Feb. 10	McPhee & Gardner, labor per Pay Roll	50	
Mar. 20	Geo. Warrell, quarantine supplies, Rasicot	34 58	
Apr. 3	W. Evans, drugs	5 00	
May 8	Alex. Brown, quarantine supplies, H. Brown	14 86	
June 12	S. J. Mackey, drugs	4 63	
	Dr. Vernon, express	95	
July 3	S. J. Mackey, drugs	18 50	
	Dr. Vernon, expense attending convention	22 85	
Sept. 4	Knight Bros., lime	1 80	
Dec. 4	Dr. Cameron, express	3 85	
" 11	Caswell, E., express	85	
			$131 18

Law Costs.

May 22	Master of Titles, reg. fee, Agr. Grounds	$3 04	
Nov. 1	Master of Titles, search of title	2 07	
Dec. 4	S. A. Jones, Town Solicitor	7 70	
" 23	Ontario Railway and Municipal Board	10 00	
			22 81

Gregory & Greek.

May 31	Bank of Ottawa, lost cheque of Gregory & Greek, charged		240 93

Grants.

Sept. 21	Civic Holiday Committee, return of license fee	$25 00	
Oct. 2	Civic Holiday Committee, grant towards building	10 00	
" 20	British Red Cross, donation	500 00	
Nov. 6	Agricultural Society, grant	100 00	
			635 00

Miscellaneous Expenditure.

Jan. 21	Harmer & Durack, Fire Hall furniture	$15 90	
Feb. 6	H. J. Brown, registration of births, etc.	43 40	
	F. A. Child, general supplies	12 20	
	Knight Bros., general supplies	70	
Mar. 20	H. J. Ward, electrical work, Fire Hall	5 70	
Apr. 3	H. J. Ward, electrical work, Fire Hall	75	
" 16	H. J. Brown, commission *re* tax sales	16 16	
	Taylor Hardware Company, sundries	50	
May 8	Hamilton Stamp Works, dog tags	6 25	
June 12	Knight Bros., lumber for wagon	3 55	
	Geo. Grasser, labor on wagon box	6 00	
July 3	Cochrane Telephone Company, Caswell 'phone	10 00	
" 17	McDougal & McCluskey, blankets	4 00	
Sept. 21	Judge Hartman, expense *re* Court of Revision	23 45	
Oct. 2	Cochrane Telephone Company, message	60	

Dec. 4	E. Drake, labor per Pay Roll	3 50	
	J. Beadman, labor per Pay Roll	4 50	
" 11	H. J. Brown, revision of list	121 28	
	E. Caswell, disbursement	1 00	
	J. Williams, valuating *re* assessment	5 00	
	W. G. Hunt, valuating *re* assessment	12 00	
			296 44

TOWN OF COCHRANE.

Detailed Statement of Disbursements.

Police Department.

Police Disbursements.

Jan. 21	T. Portland, disbursements	$15 05	
	Karam Dry Goods Company, towels, etc.	1 25	
	R. Allen, board paid for prisoners	15 30	
	Frank Childs, chemical closet, etc.	12 70	
	Jas. Geils, police cap	4 00	
	E. G. Vernon, Police Court exam.	5 00	
Feb. 6	T. Portland, disbursements	2 50	
Mar. 2	T. Portland, Davenport bed for police office	10 00	
" 6	C. Fong, meals	60	
Apr. 3	F. Childs, chemicals	1 00	
	W. Evans, stationery, etc.	65	
" 16	Jas. Geils, police uniform	34 00	
	Taylor Hardware Company, supplies	45	
May 8	Cochrane Steam Laundry, washing	1 35	
	C. Fong, meals	2 50	
" 22	J. R. Wilkinson, disbursements, 1914	9 65	
June 12	Taylor Hardware Company, supplies	3 70	
" 19	C. Fong, meals	2 50	
July 3	V. Eloy, disbursements	1 55	
	Geo. Warrell, broom, etc.	40	
" 17	S. J. Mackey, stationery, etc.	3 20	
Sept. 21	C. Fong, meals for prisoners	5 25	
Oct. 2	V. Eloy, disbursements	10 40	
	C. Fong, meals for prisoners	12 00	
Nov. 6	J. Gauthier, work in connection with cells	3 50	
	Anderson House, prisoners' meals	4 50	
	H. Pawson, carting	75	
Dec. 4	V. Eloy, disbursements	3 15	
	Anderson House, prisoners' meals	11 80	
" 11	Cochrane Telephone Company, police 'phone	6 00	
			$184 70

Police Advances (to be Returned).

Jan. 21	S. J. Dempsay, advance *re* prisoners	$30 00	
Apr. 3	V. Eloy, " "	30 00	
" 13	" " "	30 00	
" 21	" " "	46 00	
June 8	" " "	30 00	
Oct. 2	" " "	16 00	
Nov. 1	" " "	19 00	
" 27	" " "	30 00	
Sept. 21	E. C. Carmichael, " "	15 80	
" 22	V. Eloy, " "	30 00	
Dec. 24	J. Crawford, " "	30 00	
			306 80
	Total payments		$102,454 06

123 Bay Street, Toronto, Ontario, 5th March, 1917.

To the Reeve and Council, Township of Gainsboro, Ontario.

Gentlemen,—Acting under instructions from the Provincial Municipal Auditor, J. W. Sharpe, K.C., and Order-in-Council under date of the 9th day of November, 1916, an inspection, audit, or examination of the books, vouchers and moneys of the municipality of the Township of Gainsboro was made for the five years, 1911, 1912, 1913, 1914 and 1915.

Inspection was granted upon a petition signed by certain ratepayers.

Petition.

Gainsboro, 20th Sept., 1916.

(1) That the finances of the Township of Gainsboro have not been properly audited for at least twenty-five years, and that there is now a dispute between the Corporation and the Collector as to certain moneys.

(2) That the system of book-keeping carried on by the Treasurer of the said Township is antiquated and out of date, and it is in the interests of the Municipality that an audit of the accounts be made and a proper system of book-keeping instituted.

(3) Therefore your petitioners pray that, pursuant to Section 313 of the Municipal Act, a commission be issued to enquire into the financial affairs of the Corporation and all matters connected therewith.

Balance Sheet.

Balance sheet at 31st December, 1915, discloses the financial position of the Township at that date. All assets and liabilities that could be ascertained were included.

Assets.

Cash in Treasurer's hands as called for by the cash book amounted to $826.47. There was in the bank at that date $827.85, from which must be deducted two outstanding cheques amounting to $113.18, leaving a true balance of $714.67. Actual cash in Treasurer's care must therefore have been $111.80.

Taxes uncollected as per roll amounted to $1,595.58. This amount is determined by deducting the cash received by the Treasurer from the total of taxes to be collected for the year 1915, as appearing in the summary. This summary, however, does not include the statute labour tax for that year amounting to $70.00.

Taxes returned to County Treasurer for the year 1914 are detailed on a statement following. These consist of taxes amounting to $41.39 and 10 per cent. interest added 1st May, 1915, of $4.14.

United Gas Company appear as a debtor for $100.00. This is the annual rental to be paid by the Company under an agreement covered by By-law 328, passed October 8th, 1915, for permission to lay their mains through the municipality.

Delmar Zumstein appears as owing $181.88. This is explained on attached statements and separate report.

J. B. Simmerman appears as owing $186.40. This is also explained by attached statements and separate report.

Road machinery is included in the Balance Sheet at the nominal value of $200.00, for the purpose of showing the Township's ownership.

Schoolhouse belonging to Section No. 6 is shown at the value of $3,000.00 for the purpose of offsetting the debenture liability of a similar amount.

Liabilities.

County rate balance due for the year 1915 of $1,728.00 was paid in the early part of the year 1916.

Tax Collector's salary of $85.00 was not paid until the return of the roll, which took place in 1916.

School debentures under By-law No. 327, amounting to $3,000.00, are included among the liabilities. A sum sufficient to pay for the annual principal redeemed and interest accrued is levied directly on No. 6 School Section supporters, but the Township is responsible as a whole for the issue, and on this account the Schoolhouse is included as an asset and the debentures as a liability.

Surplus of $1,322.86, with the exception of $200.00 invested in road machinery, is available to carry on the next year's business.

Cash Receipts.

Receipts were as far as possible verified by statements from outside sources. No duplicate receipt or stub attachment had been kept so that there was no check possible in this direction.

Official receipt form in duplicate, numbered consecutively, should be at once instituted, and no receipts other than in this form be issued. Duplicate will be retained by the Treasurer for auditing and other references.

Cash Payments.

In the majority of cases payments are made on warrants issued, bearing the signatures of the Reeve and Clerk.

Endorsement on the back of the warrant should be by the party to whom the payment is to be made, but in actual practice this is the exception to the rule.

It appears that most of the payments are made in cash, and these warrants are prepared and the cash paid at Council meetings. Some one of the Council or some other party at the meeting make themselves responsible to pay over to the parties to whom the warrants are payable, and they accordingly endorse the warrants and receive the money, so that actual proof of the payment to the designated party is not forthcoming.

Many warrants bear no endorsement whatever, and others do not bear the signature of the Reeve or Clerk. Some of the payments are not authorized in the minutes, and all these irregular payments have been listed according to the years in which they were paid and attached to this report.

Many of the larger payments were verified with statements received from various firms. All vouchers for the year 1912 were missing, and the payments as exhibited in the cash book could only be compared with the authorization of payment contained in the minute book. Such payments not authorized are shown on attached statements.

Invoices for most of the transactions were not kept, so it was necessary to write to several firms for statements of their accounts. It must be stated, however, that in this respect everything was found correct.

Actual payment took place in a number of cases by cheque, and the endorsement on these were satisfactory. Cheques only bear the signature of the Treasurer, J. B. Simmerman, and it might rightly be stated that this account is more in the nature of a personal one.

Cheque, December 4th, 1911, Emery Gee, S.S. No. 5	$30 32,	not endorsed
Cheque, December 15th, 1911, Emery Gee, S.S. No. 5	404 22	"
Cheque, November 23rd, 1911, Emery Gee, S.S. No. 5	100 00	"
Cheque, October 28th, 1914, Walter Misiner, S.S. No. 11	112 86	"

In December, 1913, twelve cheques were issued by D. Zumstein, who was Tax Collector on the Tax Bank Account at Smithville. They were mostly for school purposes.

All receipts were not deposited into the bank, as the currency was retained to pay the warrants, and if there was no cash on hand from this source, he drew a cheque for two or three hundred dollars cash, for the purpose of paying these accounts. It has been suggested that cheques be issued for all payments. These will be numbered consecutively, and be signed at the time of issue by the Reeve and Clerk, and countersigned by the Treasurer. This is stated by the officials to be quite feasible as at the present time the residents are being paid by the Creamery Companies with cheques.

Receipts should therefore be deposited intact into the bank and no withdrawals other than by cheque bearing the signature of the Reeve, Clerk and Treasurer be permitted.

Pay rolls or road lists were destroyed, so payments on this account could not be verified therewith.

Auditors.

Local auditors have not carried out their duties in a satisfactory and careful manner.

Assessment and Collector's rolls do not appear to have been dealt with at all, the audit being practically confined to the Municipal Cash Book. Even with this limited scope to deal with the results in so far as a protection to the ratepayers was of little avail. It is rightly stated that the compensation offered by the Municipality for their services was so small that it did not permit them to make a lengthy examination. Nevertheless their assumption of office placed the responsibility attached thereto upon themselves, and accordingly, it was for them to carry out their duties as laid down by the statutes, and which is covered by a pamphlet issued by the Provincial Municipal Auditor entitled, "Suggestions touching the duties of Auditors."

Reference to the Treasurer's account with the Municipality, wherein he has to account for $186.40, and also to the statement with the Tax Collector, showing an amount of $181.88 to be accounted for, emphasizes the foregoing remarks.

Auditors' reports for the years 1912, 1913, 1914 and 1915 were compared with the Cash Book, and with the exception of the year 1913, were not in agreement therewith.

In the year 1912 there were several differences and omissions appearing among the payments on the report; while the totals agreed with the Cash Book totals,

the items did not. For instance, a payment to the County Treasurer, amounting to $1,945.93, does not appear on the Auditor's Report at all, and there are several other items similar. The Cash Book states that there were two payments to A. Piper of $30.00 each; Auditor's Report only discloses one.

In the year 1914 a similar condition prevailed; the totals on the Auditor's Report agreed with those appearing in the Cash Book; but the items did not. For instance, a payment on December 25th, made to the Chatham Bridge Company for $325.00, appears in the report as $3.25. A payment to the same people on October 22nd, of $550.00, is omitted entirely. A statement from the Company, however, shows that the payments made were $325.00 and $550.00. A payment to school section No. 10 appears in the report as $708.51; this should be $782.51. Payment to J. A. Dalrymple on December 15th, appears in the report as $28.00, and in the Cash Book as $38.00.

Two payments are recorded in the Cash Book to C. North of $148.50; only one of which appears in the Auditor's Report.

In the Cash Book on December 15th, 1914, there appears a receipt from the Tax Collector of $5,120.00. This was omitted from the printed Auditor's Report for that year.

In the year 1915 the following items were omitted from the Auditor's Report:

Austin Ecker	$2 00
Foster & Schrum	20 85
S. Schrum	5 50

Township Treasurer.

Mr. J. B. Simmerman has been Treasurer for some thirty years. The surety bond of $20,000.00 bears the date of 10th of February, 1890. This bond bears the signature of Wilson McPherson, John W. Moot, and J. B. Simmerman. The second named party, John W. Moot, is dead, and it would appear necessary to obtain a new bond.

Municipal Cash Book has been in use for a great many years, and for the five years under review there is nothing to report in his keeping of the Cash Book, except of a few erasures.

Pages 143-144 at the end of 1915 is torn out. The Treasurer states that this was badly blotted with ink by the auditors and they destroyed it.

Special columns in the Cash Book have been used to some extent for the purpose covered by the headings. The totals, however, should be carried forward continuously through the whole year.

Vouchers for the year 1912 are missing entirely. Why this should be is not stated. The fact of the 1911 vouchers being presented for audit would tend to show that all the vouchers previous to the year 1913 were not destroyed.

Collector's roll for the year 1912 was also missing, and a careful search failed to discover it. The Tax Collector states that he returned the roll along with his final settlement to the Treasurer, and Mr. Simmerman acknowledges receipt of it.

The Treasurer is responsible for the roll after its final return, so that the blame of the loss of the roll is placed fairly on Mr. Simmerman.

Differences ascertained between the Cash Book entries and the warrants and Minute Book have been listed on an attached statement.

To the 31st of December, 1915, the Treasurer appears to have taken credit wrongly for the net amount of $186.40.

These items have been taken up separately with him and he has satisfied himself of their correctness. They all appear to be pure errors in entering up the Cash Book, and have been passed over by the local auditors, without any comment.

The two outstanding items among these are: A. Piper, labour on Gee Bridge, $30.00, and Charles North, labour on Patterson Bridge, $148.50. The explanation accorded to the first payment of A. Piper of $30.00 is that this payment was made on November 7th 1912, and appears in Cash Book, folio 114; it was also entered by the auditors on Cash Book, 119, but only appears once in their report for that year. It was authorized for payment only once in the Minute Book. The vouchers for the year 1912 are lost, so it cannot be stated if two warrants existed, but it looks on the surface that the local auditors made an error in making a second entry at the year end.

In the case of Charles North, payment of $148.50, this was authorized for payment only once. It would appear that payment was made by cheque on October 22nd, 1914, before it was authorized. On December 15th, it was passed for payment and a warrant was issued. Apparently one entry was made when the cheque was issued, and the other entry made when the warrant was issued. Cheque is in proper form and bears the endorsement of Charles North. Warrant bears no endorsement, although it appears in the Cash Book twice; it is shown in the auditor's report for that year only once.

Council Meetings.

Many payments are authorized in the Minute Book at a later date than the actual payment takes place. Number of payments have not been authorized at all. It is apparent that in the years 1912, 1913, 1914 and 1915 the regular council meetings only took place every other month, and it was stated that on this account it was not possible to have the payments passed regularly.

Minute Book.

Minutes for the five years were legibly written and all signed by the Reeve and Clerk. A great deal of information that should have been included was omitted. There does not appear to be any particulars about the calling for tenders on bridge building, the acceptance thereof, or any other matter pertaining thereto. It is stated that sub-committees of the council dealt with these matters, but their decisions or actions were not recorded.

By-Laws.

By-law book seen was commenced 23rd January, 1875. Numbers one to 141 were signed by Reeve and Clerk, but not all of them were sealed. Numbers 142 to 167 were written in by-law book, but were not signed by the Reeve or Clerk and were apparently only copies.

There were loose on the file the following numbers: 149, 150, 163, 174, 178, 180, 186, 192, 220, 235, 247, 255, 256, 261, 266, 273, 290, 300, 307, 308, 310, 311, 312, 313, 315, 316, 317, 318, 320, 321, 322, 324, 325, 326, 327, 328, 330, 332, 333, 336, 337, 338 and 340; all other numbers between 167 and 340 are missing. This is a serious matter as the council has no reference to some of its past legislature.

It was observed that some of the by-laws enumerated above were in lead pencil.

Permanency and safety of by-laws can only be attained if all of them are written into a book with strong binding. Loose copies may be kept, but in case of loss, recourse could be made to the book.

Assessment Rolls.

Rolls for the five years were seen and those for years 1911, 1913, 1914 and 1915 were checked with the Collector's Rolls for the similar years.

Assessor's affirmation was seen with the exception of that one for the year 1911, which is missing.

Collector's Rolls.

Collector's Rolls, with the exception of the one for the year 1912, which is missing, were seen. Extensions were all correct, and levies made therein on account of school purposes were all paid over to the School Treasurer.

Collector's oath and Clerk's certificate were seen in the rolls for the years 1913, 1914 and 1915, but were missing from the roll of 1911.

Summary contained in the back of the rolls were correct, with the exception of the Statute Labour, which was omitted therefrom in the years 1913, 1914 and 1915.

Collector's bond for the years 1911 to 1916 were in the care of the Clerk. The one covering the Collector, George W. Misiner, Collector for 1916, is for $15,000.00, and the sureties are Levi W. Smith and James H. Mittelfehldt. It is dated the 13th September, 1916, but the signatures were not witnessed. The Clerk's attention was drawn to this and no doubt it has been attended to.

Tax Collector, Years 1913, 1914 and 1915.

The following is a report made by the Provincial Municipal Auditor, J. W. Sharpe, K.C., at the request of the Council prior to the ratepayers' petition asking for an audit:

To the Reeve and Council of the Township of Gainsboro, in the County of Lincoln:

Gentlemen,—As requested, I have made an examination of the Collector's Rolls and returns of the Township of Gainsboro for the years 1913, 1914 and 1915 and hand you herewith accounts made up from such examination.

On the seventeenth day of the present month I wrote to the Collector asking him to send me a statement of amounts paid by him to the Treasurer, but have not received a reply. The payments for which I have given him credit are taken from printed copies of auditor's reports for 1913, 1914 and 1915 and from information received from your Treasurer.

The Collector has not made sworn returns for the years 1913 and 1914 as required by section 121 of the Assessment Act. I have, therefore, not been able to give him credit for unpaid taxes for these years. He should be required to make the proper sworn returns and should then receive credit for the amount of unpaid taxes as verified by his oath.

I submit a statement of items which appear as unpaid on the rolls, some of which probably have been paid. This is an important matter which should be investigated and any errors corrected.

(Sgd.) J. W. Sharpe,
Provincial Municipal Auditor.

Toronto, 24th October, 1916.

Further examination confirms Mr. Sharpe's statements and those submitted herewith are similar to those prepared by him with the exception of the year 1914, in which credit was given to the Tax Collector of the return of taxes unpaid amounting to $41.39. The County Treasurer states that these have been returned to him by the Treasurer. In regard to the Collector not making sworn returns for the years 1913 and 1914. In the year 1915 there does not appear to be any taxes unpaid. In the year 1914 the return was in his handwriting and bears his signature, but was not sworn to in that section where the affidavit is attached, and upon being requested to swear to the return he stated that he had already sworn to the return. The Treasurer, however, has no recollection of this.

Statements with the Tax Collector for the years 1913, 1914 and 1915 exhibit the following amounts due by him:

Year 1913	$48.25
" 1914	63.63
" 1915	70.00
Total	$181.88

These amounts are similar to page totals appearing in the Collector's Roll of Statute labour tax, which was not included in the Collector's Roll summary for these years.

Mr. Zumstein was requested by the Provincial Municipal Auditor to furnish a statement of amounts paid by him to the Treasurer but received no reply.

He was visited personally but would give no satisfactory information nor produce any receipts.

Statements of his account were submitted to his lawyer and request was made for him to give particulars of any differences that there may be between such statements and the receipts held by Mr. Zumstein. Letter from Mr. Zumstein claims that he has overpaid on the tax collections for the years 1913, 1914 and 1915 to the extent of $121.48, but this information is of no use as he fails to state what items there are that the Treasurer did not give him credit for.

Letter on February 15th to his lawyer asking for an interview has not been replied to. Statements are, therefore, prepared from entries by the Treasurer in the Municipal Cash Book.

Tax Collector for Year 1911.

Tax Collector's account for this year appears among the other statements. There is a difference of $7.88. There were no returns made to the County Treasurer of any taxes not collected and from a scrutiny of the roll there are only two items to which any special attention can be drawn. On page 19, roll number 311, a $9.00 item has marked against it "Don't think it is paid." On page 51, roll number 744, there is a balance of $4.88 which is marked, "J. R. Goring should pay." Collector for this year was Walter Misiner.

Debentures.

There was only one issue outstanding. This was issued under By-law number 327, dated August 17, 1915, and was for schoolhouse for Number 6 Section. There was no entry in the Cash Book showing the receipt of the proceeds of the sale of debentures. The Treasurer should in all cases show as a receipt the proceeds of the sale, and as a payment, the handing over to the School Treasurer of a similar amount.

Tax Collector's Receipt.

There is none now in use and the roll only bears the marking in reference to the payment. Form as submitted herewith should be printed in duplicate and numbered consecutively, and no moneys should be received by the Collector without the issue of one of these receipts. The duplicate will be retained for audit and other purposes.

Tax Collector's Receipt Summary.

This form is for entering up of all cash received as shown on the duplicate receipt. It will contain receipt number, date of payment, discount allowed, or interest imposed. The date and amount of the deposit or payment over to the Treasurer will be entered in the bank deposits column.

Tax Collector's Roll.

Stock book ruling of this roll is not well arranged as far as the provision for showing cash received, date of payment, etc., is concerned. The only way to overcome the difficulty in connection with the Collector's Roll is to have one specially printed.

Form submitted herewith is an extension of the stock ruling. Columns are provided for the treasurer to show the cash received by him, the date of receipt, and interest added. Other columns are provided to show the cash received by the Collector, the date of receipt, and discount allowed.

A final column is for the arrears to be entered that are carried forward to the next year.

Ledger.

Ledger should be kept by the Treasurer wherein record should be made of transactions affecting the Municipality.

Tax Collector should be debited therein with the total amount of taxes to be collected according to the roll. Credit would be made to the several levy accounts. For instance each of the School Sections, the County, Provincial Government, General School, and other levies would be credited. The cash received from the Tax Collector would be entered in the Cash Book and credited to his account in the ledger. Upon the roll being returned the taxes uncollected according to the sworn statement of the Collector, would be credited to his account, thus leaving no balance thereto.

Payments to the County Treasurer, School Sections, and Provincial Government would be debited to the respective levy accounts. At the year end the ledger would, therefore, disclose what balances remained unpaid. There is no debenture book and as there is only one issue outstanding the details of this issue could be contained in the ledger.

In the case of contracts for bridge building, etc., the company performing the work should receive credit for the total amount of the contract and payments as they are made charged thereto.

Annual rental charged to the gas companies for permission to lay their mains through the Municipality should also be entered, as the payment of such rental in some cases has not taken place in the year in which it is due.

OFFICIAL RECEIPT FORM

TOWNSHIP OF GAINSBORO

Treasurer's Official Receipt No.....

$.....100. Date.....of.....191..

Received from.....

The sum of.....100 Dollars

being for .....

.....

Cash Book Folio.....

.....
Treasurer.

TAX RECEIPT

No.....

TOWNSHIP OF GAINSBORO

Date.....191..

RECEIVED from.....

the sum of.....100 Dollars

Roll No.	Lot No.	Block	Plan	Concession	Amount	
				Discount		
				Interest		
				Total.....		

.....Collector.

TAX COLLECTOR'S CASH BOOK

TOWNSHIP OF GAINSBORO

TAX COLLECTOR'S CASH BOOK

Year 19.....

Roll No.	Date	Discount Allowed	Cash Received		Bank Deposits	
			Interest	Current Taxes	Date	Amount

TOWNSHIP OF GAINSBORO

TAX ROLL

Total Taxes	Paid to Collector		Discount Allowed	Paid to Treasurer		Interest Added	Arrears Forward
	Date	Amount		Date	Amount		

Cheques and Warrants.

As stated previously it is unnecessary to use payment warrants as the cheque bearing the signatures of the Reeve and Clerk, and countersigned by the Treasurer, are quite sufficient.

Records.

None of the Township books appear to be kept in a safe or vault, and such records are liable to be destroyed by fire.

In the case of the tax and assessment rolls, minute and by-law books, and other records in the Clerk's care, these are in a building where there is no vault and it would be to the ratepayers' interest if some arrangement was made for purchasing a safe and depositing these records therein.

General Rates.

Statement submitted exhibits rates for the years 1911 to 1916 and the gradual increase from the year 1911 when the rates were 7 4-5 mills, to the year 1916, where the rate is 13½ mills, is noticeable.

Special School Taxes.

Those for the years 1911, 1913, 1914 and 1915 have been listed on an attached statement. These amounts with the addition of the grant from the General School rate were paid over to the School Treasurers without any deductions.

Conclusion.

Loss of the Collector's Roll for the year 1912, the warrants and pay cheques of the same year, and the absence of proper endorsements on the warrants of invoices, and road lists, prevented a satisfactory audit being made.

In future the greatest care should be exercised in the safe-keeping of all books and documents. Nothing whatever should be destroyed of an original nature.

Mr. Freure, the Clerk; Mr. McPherson, the Assessor, and Mr. Simmerman, the Treasurer, gave all the assistance possible in the conduct of the work.

The institution of cheque payments immediately, and other forms such as the official receipt, should at once prevent past conditions prevailing.

Report and statements are respectfully submitted herewith.

Henry Glover,
Auditor.

TOWNSHIP OF GAINSBORO.

PROVINCIAL MUNICIPAL AUDITOR'S REPORT

For the Years 1911-1915.

Statements.

TOWNSHIP OF GAINSBORO.

BALANCE SHEET AT 31ST DECEMBER, 1915.

Assets.

Cash in Treasurer's hands, per Cash Book	$826 47
Taxes uncollected, per Roll	1,595 58
1914 taxes returned to County Treasurer, per Statement	45 53
United Gas Company, 1915 rental	100 00
Delmar Zumstein, per Statement	181 88
J. B. Simmerman, per Statement	186 40
Road machinery	200 00
School house, S.S. No. 6	3,000 00

Liabilities.

County Rate, balance 1915	$1,728 00	
Tax Collector's salary	85 00	
School Debenture, By-law No. 327	3,000 00	
Surplus	1,322 86	
	$6,135 86	$6,135 86

TOWNSHIP OF GAINSBORO.

J. B. SIMMERMAN, IN ACCOUNT WITH THE TOWNSHIP.

			Dr.	Cr.
1911.				
Apr. 19	Repairs on road machine, C.B., fo. 103	$10 50		
	Warrant and Minute Book shows this amount to be	10 15		
			$0 35	
Aug. 21	Geo. Hescott, for plank, C.B., fo. 104	$3 25		
	Warrant and Minute Book shows this amount to be	3 12		
			13	
Nov. 6	Edmund Beamer, for labor, C.B., fo. 106	$8 00		
	Warrant and Minute Book shows this amount to be	8 50		
			....	$0 50
1912.				
Nov. 7	A. Piper, labor on Gee Bridge, C.B., fo. 114	$30 00		
	This payment is entered also on C.B., fo. 119. Passed for payment only once in Minute Book. The vouchers for the year 1912 are lost, so it cannot be stated if two warrants existed. The second entry was made at end of year by the Township Auditors, and is apparently a duplicate of the former	.....	30 00	
1914.				
Aug. 17	J. Krick, labor on bridge, C.B., fo. 132	$11 00		
	Warrant and Minute Book shows this amount to be	4 00		
			7 00	
Dec. 15	A. Comfort, labor, C.B., fo. 134	$3 00		
	Warrant and Minute Book shows this amount to be	3 38		
			....	38
Dec. 15	J. Dalrymple, committee fees, C.B., fo. 135	$38 00		
	Warrant and Minute Book shows this amount to be	28 00		
			10 00	

			Dr.	Cr.
Dec. 15	Fred Bouch, labor, C.B., fo. 135	$4 00		
	Warrant and Minute Book shows this amount to be	5 00		
			....	1 00
Dec. 15	J. E. Cosby, labor, C.B., fo. 135	$2 80		
	Warrant and Minute Book shows this amount to be	2 00		
			80	
Dec. 15	Lloyd Chapman, labor, Patterson Bridge			
	Warrant of $1.00 paid, but does not appear to be entered in Cash Book. See memorandum on C.B., 137	.....	.....	1 00
Oct. 22	Chas. North, labor, Patterson Bridge, C.B., fo. 133; building abutments	$148 50		
	Entered also on Cash Book, fo. 135. Passed for payment only once in Minute Book. Warrant seen is dated December 15 and is not endorsed. Cheque was issued October 22, 1914. Entries have apparently been made from both cheque and warrant. Cheque was given first and payment confirmed at a subsequent meeting of Council when Clerk issued warrant, which is usual procedure. Although in Cash Book twice, it only appears in Auditor's report once	.....	148 50	
1912.				
Aug. 12	Sterling Bank Loan, C.B., fo. 113	500 00		
	Loan of $500.00 entered on this date. On November 28, 1912, payment of loan entered on Cash Book, fo. 117, as Principal, $492.50, and $7.50, Interest. The Treasurer has not taken credit for paying the full Principal amount of $500.00	.....	.....	7 50
			$196 78	$10 38
	Balance due by Treasurer		.....	186 40
			$196 78	$196 78

TOWNSHIP OF GAINSBORO.

Tax Collector's Account for the Year 1911.

Amount of Taxes shown on folio 61 of Collector's Roll		$12,530 68	
Paid to Treasurer:			
November 6, 1911	.....		$400 00
" 13, 1911	.....		60 00
" 16, 1911	.....		50 00
" 23, 1911	.....		451 25
December 1, 1911	.....		23 00
" 13, 1911	.....		7,500 00
" 15, 1911	.....		1,650 00
" 15, 1911	.....		56 18
January 8, 1912	.....		1,725 00
July 13, 1912	.....		606 20
August 10, 1912. Balance, 1911	.....		1 17
Difference	.....		7 88
		$12,530 68	$12,530 68

The following items appearing in the Collector's Roll for the year 1911 are listed along with the remarks:

Page 19, Roll No. 311, Year 1911.....	$9 00	Don't think it is paid.
Page 51, Roll No. 744, Year 1911.....	4 88	J. R. Goring should pay.

TOWNSHIP OF GAINSBORO.

Tax Collector's Account for the Year 1913.

Amount of Taxes shown on folio 61 of Collector's Roll.....		$14,386 74	
Statute Labor Tax on folio 60, which was not included in above.		48 25	
Paid to Treasurer:			
October, 1913		.....	$920 00
October, 1913		.....	11,905 28
January, 1914		.....	1,231 23
August, 1914		.....	330 23
Balance due by Collector		.....	48 25
		$14,434 99	$14,434 99

Tax Collector's Account for the Year 1914.

Amount of Taxes shown on folio 61 of Collector's Roll		$15,281 86	
Statute Labor Tax on folio 60, which was not included in above.		62 75	
Paid to Treasurer:			
December, 1914		.....	540 10
" "		.....	1,020 95
" "		.....	50 00
" "		.....	7,597 60
" "		.....	5,120 00
January 29, 1915		.....	390 00
May 9, 1915		.....	342 08
May 25, 1915		.....	178 86
Return of Taxes Unpaid:			
Roll No. 416, Con. 4, C. P. N. E. P.	$3 73		
Roll No. 528, Con. 4, E. ½	15 90		
Roll No. 750, Con. 2, W. ½ S. ½	21 76		
	$41 39		
		.....	41 39
Balance due by Collector		.....	63 63
		$15,344 61	$15,344 61

TOWNSHIP OF GAINSBORO.

Tax Collector's Account for the Year 1915.

Amount of tax as shown on folio 61 of Collector's roll		$20,508 82	
Statute Labor Tax on folio 60, not included in above		70 00	
Paid to Treasurer, October 18th, 1915			232 95
October 18th, 1915			1,170 00
December 11th, 1915			4,500 00
December 11th, 1915			13,010 29
March 3rd, 1916			1,230 00
April 17th, 1916			247 92
Collector's sworn return taxes not paid:			
Roll No. 526, Con. 4, E. ½ lot 1	$38 78		
Roll No. 744, Con. 2, W. ½ S. ½ lot 14	28 88		
		.....	67 66
Balance due by Collector		.....	70 00
		$20,578 82	$20,578 82

Summary of Amounts Due by Delmar Zumstein, Tax Collector.

1913	$48 25
1914	63 63
1915	70 00
	$181 88

TOWNSHIP OF GAINSBORO.

Tax Arrears Returned to County Treasurer for Years 1914 and 1915.

	Roll No.	Con.	Lot	Amount
1914	416	4, C. P. N. E. P.	..	$3 73
	528	4, E. ½	..	15 90
	750	2, W. ½ S. ½	..	21 76
				41 39
		Ten per cent. interest added, 1st May, 1915		4 14
				$45 53
1915	526	4, E. ½	1	$38 78
	744	2, W. ½, S. ½	14	28 88
				$67 66

Treasurer's Bank Account Reconciliation at 31st December, 1915.

To balance in bank, per Pass Book	$827 85	
By cheques outstanding:		
December 10th, 1915, J. B. Hoist, No. 6 school	.....	$105 18
December 15th, 1915, Dr. Park	.....	8 00
By correct balance in bank	.....	714 67
	$827 85	$827 85

School Section No. 6, Debenture Issue Under By-law No. 327, August 17, 1915. Interest, 6 per cent.

No.	Due	Principal	Interest
1	1916	$500 00	$180 00
2	1917	500 00	150 00
3	1918	500 00	120 00
4	1919	500 00	90 00
5	1920	500 00	60 00
6	1921	500 00	30 00
		$3,000 00	$630 00

Payments Made in the Years 1911 and 1912 Listed on Account of Irregularities in the Payments

C.B. Folio.	Date.	Paid To.	Amount.	Remarks.
	1911.			
108	Dec. 4	F. E. Nelson, S.S. No. 1...	$20 29	No proof of payment.
108	Dec. 4	Clerk, *re* voters' list	23 00	" "
	1912.			
111	Jan. 8	Journal Printing Co.....	30 00	Not authorized in minute book.
113	July 1	Sawyer & Massey, road machinery	237 50	" "
113	Aug. 12	R. Brown, labor	75	" "
114	Sept. 12	Royal Grafton Steel, *re* Crow Bridge	127 62	" "
115	Nov. 11	Work on Gee Bridge	.....	Consists of payments made to 36
116	Nov. 11	Work on Gee Bridge	.....	persons, not authorized in
117	Nov. 27	Work on Gee Bridge	561 30	minute book.
119	Dec. 16	Hamilton Bridge Co.	1,002 50	Not authorized in minute book.
	Aug. 12	Isaac Lane, *re* Crow Bridge	7 50	" "
112	Mar. 18	W. A. Park, shovelling snow	25 70	" "

PAYMENTS MADE IN THE YEAR 1913 LISTED ON ACCOUNT OF IRREGULARITIES IN THE PAYMENTS.

C.B. Folio.	Date.	Paid To.	Amount.	Remarks.
121	Mar. 10	W. Felham	$2 25	Warrant not signed by Reeve.
121	Mar. 10	Clerk for salary	10 00	" "
122	June 9	E. Lymburner	188 33	Cheque issued covering 17 items of labor. No proof of payment to separate parties seen. Not authorized in minute book.
122	July 11	G. W. Crow	24 10	Not authorized in minute book.
122	" 13	B. Greening Wire Co.	32 82	" "
123	" 22	Hamilton Bridge Co.	850 00	" " *re* Gee Bridge.
123	" 17	C. Wills	13 00	Warrant not signed by Reeve.
123	" 31	F. Patterson	6 00	" "
124	Sep. 19	Emerson Corby	10 00	No warrant, not authorized in minute book. Order signed J. E. Lymburner.
124	" 25	T. E. Cook	26 50	No warrant, not in minute book. Order C. L. Johnson.
124	Oct. 13	E. A. McPherson	42 50	No warrant, not in minute book. Order C. L. Johnson.
125	Nov. 18	Canada Ingot Iron Co.	25 76	Not in minute book.
		Geo. Ross	44 45	" "
127	Dec. 15	R. Lounsbury	1 00	Warrant not signed by Reeve.
		D. Chambers	6 45	" "
		Amos Beamer	4 50	" "
		Silas Beamer	10 00	" "
		J. Krick	2 00	" "
		Geo. Hiscott	4 00	" "
		O. Teft	2 00	" "
		Newton Teft	10 00	" "
		J. Joshlin	4 00	" "
		B. Coughill	1 50	" "
		D. Shruman	15 68	" "
		J. E. Lymburner	3 00	" "
		W. Sheldon	13 98	" "
		Geo. Chace	5 00	" "
		J. E. Lymburner	35 50	" "
128	Dec. 15	Township of Caister	26 19	Not in minute book.
129	June 3	Canada Ingot Iron Co.	112 20	" "

PAYMENTS MADE IN THE YEARS 1914 AND 1915 LISTED ON ACCOUNT OF IRREGULARITIES IN THE PAYMENTS.

C.B. Folio.	Date.	Paid To.	Amount.	Remarks.
1914.				
131	July 3	G. N. Chace	$45 00	Warrant not signed by Reeve.
	Aug. 17	Hamilton Bridge Co.	68 00	" "
	July 3	J. Joslin	40 00	No warrant. Not authorized in minute book.
133	Sep. 15	J. E. Lymburner	84 15	Cheques issued to J. E. L. to cover seven items. Not authorized in minute book. No proof of payment to parties.
133	Sep. 25	Chatham Bridge Co.	550 00	Not authorized in minute book.
133	Oct. 22	Chatham Bridge Co.	325 00	" "
134	Dec. 15	School Section No. 11	807 66	Warrant not signed by Reeve.
1915.				
142	Dec. 15	R. Brown	6 65	" "
138	Mar. 1	C. Simpson, commutation.	38 00	Not authorized in minute book.
143	Dec. 15	E. Lane	1 50	No warrant. Not authorized in minute book.
	Dec. 15	Patriotic Fund	500 00	No proof of payment. D. Zumstein states he sent cheque.

TOWNSHIP OF GAINSBORO.

General Rates for Years 1911 to 1916.

	1911 Mills	1912 Mills	1913 Mills	1914 Mills	1915 Mills	1916 Mills
County rate	2 3/10	2½	3⅘	3⅕	4 4/10	5 4/10
Township rate	2½	2½	2¼	2½	4	4
School general	3	3	3	3	3	3
War tax	..	..	..	..	1 1/10	1 1/10
	7 8/10	8	9 1/20	8 7/10	12 5/10	13 5/10

Special School Taxes, Years 1911, 1913, 1914, 1915.

School Section.	Year 1911	Year 1913	Year 1914	Year 1915
S. S. No. 1	$101 17	$174 81	$401 53	$302 46
2	168 69	217 78	305 63	359 39
3	316 10	327 78	415 60	339 08
4	101 03	253 60	305 06	318 46
5	204 22	306 33	259 64	427 09
6	300 74	327 72	301 67	906 05
7	306 79	205 34	308 10	304 69
8	203 34	309 82	405 28	405 31
9	203 86	267 04	358 72	355 57
10	102 20	183 55	482 57	332 93
11	407 66	454 88	507 38	702 81
Union 5	43 75	49 00	60 90	42 63
6	50 99	49 04	57 94	48 18
7	78 19	90 04	116 35	77 65

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THIRTY-FIRST ANNUAL REPORT

OF THE

COMMISSIONERS

FOR THE

Queen Victoria Niagara Falls Park

1916

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1917

Printed by
WILLIAM BRIGGS,
Cor. Queen & John Sts.
Toronto.

COMMISSIONERS FOR THE QUEEN VICTORIA NIAGARA FALLS PARK

P. W. Ellis, Chairman, Toronto.

George H. Wilkes, Brantford.

Colonel L. Clarke Raymond, K.C., Welland.

Lionel H. Clarke, Toronto.

William L. Doran, Niagara Falls.

James D. Chaplin, St. Catharines.

Dr. H. Y. Grant, Niagara Falls.

John H. Jackson, C.E.,
Superintendent.

J. Harrison Pew,
Assistant Superintendent.

J. F. Quillinan,
Accountant.

Henry J. Moore,
Chief Gardener.

Walter M. Goring,
Assistant Engineer.

PARLIAMENT BUILDINGS,

TORONTO.

To the Honourable JOHN STRATHEARN HENDRIE, C.V.O., a Lieutenant-Colonel in the Militia of Canada, etc., etc., etc.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I beg to submit herewith the Thirty-first Annual Report of the Queen Victoria Niagara Falls Park Commission, 1916.

I have the honour to be,

Your Honour's most obedient servant,

W. D. MCPHERSON,

Provincial Secretary.

To the Honourable W. D. McPherson, K.C., M.P.P., *Provincial Secretary, Province of Ontario, Parliament Buildings, Toronto.*

Sir,—I have the honour to transmit herewith for presentation to the Legislature of Ontario the Thirty-first Annual Report of the Commissioners for the Queen Victoria Niagara Falls Park (being for the year 1916), together with the statements of receipts and expenditures, and other documents connected with the Report.

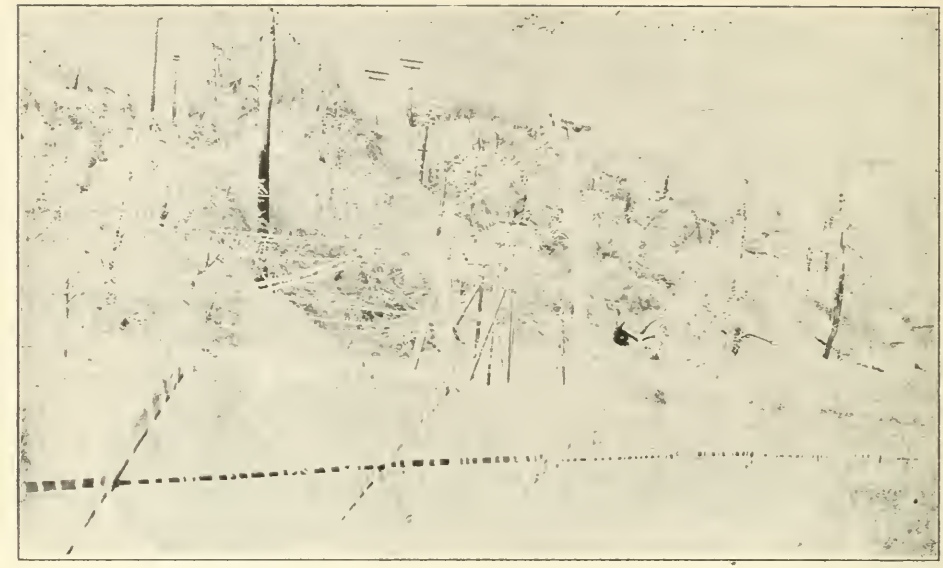
I have the honour to be, Sir,

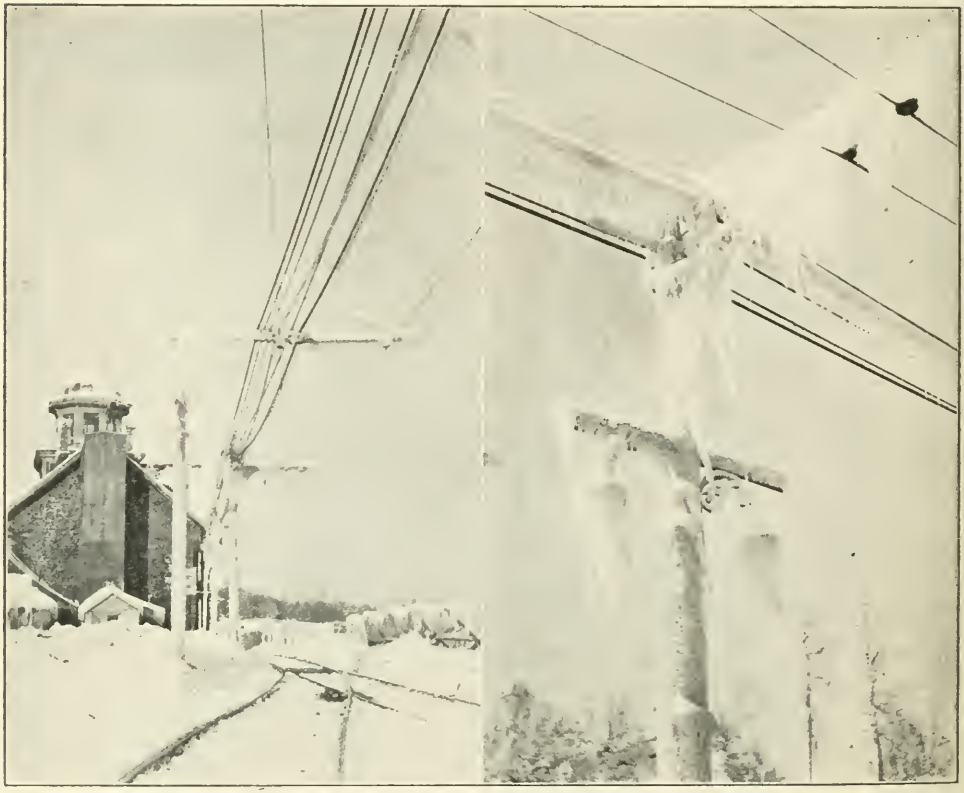
Your obedient servant,

P. W. Ellis,

Chairman.

Toronto, Ontario, March 19, 1917.





Ice conditions, Table Rock, January, 1917.

THIRTY-FIRST ANNUAL REPORT

OF THE

Commissioners for the Queen Victoria Niagara Falls Park

To His Honour Sir John Strathearn Hendrie, C.V.O.,

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The Commissioners for the Queen Victoria Niagara Falls Park System submit herewith for the information of the Legislature as required by Statute the Thirty-first Annual Report covering the administration of the system of Parks along the Niagara Frontier for the fiscal year ending December 31st, 1916.

Another year has passed under war conditions, and the Park administration with its plans of development and improvement has again been influenced by the titanic struggle that the Empire is engaged in. The extension of the Boulevard roadways to connect the various Park areas as well as important new features included in the construction programme for the years 1915 and 1916 were entirely abandoned. Every effort in the meantime has been directed to the upkeep of the buildings and grounds in order that no unnecessary deterioration should take place. In the expectation that the war might terminate before the end of 1916, several items of capital expenditure were outlined and approved by Order-in-Council, but for the most part these were not proceeded with, and the amounts remain unexpended.

Advantage was taken of the small requirements for improvement work to again make a large payment upon the sinking fund account for the retirement of Park debentures falling due on July 1st, 1927.

The military authorities required the use of an extensive area in the Park proper for camp grounds and the closing of the zone of the Park containing the plants of the power companies lightened the usual maintenance work. The force of workmen available was greatly reduced owing to the demand for men both in the district and with one of the power companies in Queen Victoria Park where extension operations were being undertaken. To meet the rising scale of the cost of living and the upward tendency of wage rates, increases were made to Park workmen, and difficult as the situation was the appearance of the Park was kept up to a high standard of maintenance.

One member of the office staff volunteered for overseas military service and joined an infantry unit. His military allowance is being supplemented by a monthly payment in accordance with the policy of the Commissioners to make up any deficiency in salary that might otherwise be suffered from enlisting.

In 1913 the Commissioners granted a franchise to Spanish capitalists for the construction and operation of an aerial tramway across the Whirlpool. The lease was for a term of ten years with the right of renewal, and provided that the undertaking might be purchased by the Commissioners at the end of twenty years, or at

the end of any subsequent ten year period. It was expected that the tramway would be in operation by January 1st, 1915, but the European war jeopardized the company's plans to such an extent that it was necessary to seek an extension of time.

Rentals were paid from August 1st, 1914, and the extension granted stipulated that the works should be completed by December 31st, 1915. Construction was begun in July, 1915, and prosecuted vigorously, but circumstances quite beyond the control of the company delayed the operations, with the result that the tramway was only opened for traffic on August 8th, 1916. Owing to the length of time during which no revenue was received the company was, upon request, relieved of two quarterly payments of rent amounting to $1,750.00. The operation of this new means of seeing the Whirlpool and Niagara River resulted in many tourists taking the trip, and it promises to be a popular addition to the facilities for visitors.

The company has not enjoyed the benefit of a proper carriage road to either of the terminal points, depending altogether upon foot traffic and electric railway patrons. The Commissioners are now considering the advisability of extending River Road or boulevard northerly to provide for carriage traffic. The extension proposed will form part of the route of the Niagara Frontier Boulevard System from Niagara Falls to Queenston.

Power Companies.

In February, 1916, the Ontario Power Company gave notice that it intended to proceed with the construction of the main water carrying conduit No. 3 under its agreements, the first two conduits each having a cross sectional area equal to that of an eighteen foot circle, having been built in 1905 and 1910. The Company also sought a modification of its agreement with the Commissioners fixing the location of No. 3 surge tank, a structure related to No. 3 conduit. In the agreement dated November 18th, 1910, the location of surge tank No. 3 was indicated immediately adjacent to surge tank No. 2, and just south of the Administration Building. The Commissioners, however, reserved the right of locating the building immediately north of the Administration Building, but on March 30th, 1914, upon notification that the Company proposed to commence construction, definitely settled upon the more southerly position. The Ontario Power Company have advised the Commissioners that the location which they agreed to is an impracticable one owing to its distance from the main water carrying conduit No. 3, and have proposed a new location which would require a portion of the site occupied by the main office building and Park restaurant. The Commissioners on their part pointed out that the Company had failed to pay its additional rentals, although a decision favourable to the Commissioners' contention respecting this matter has been given by the Court of final appeal, the Privy Council, against the Canadian Niagara Power Company, a Corporation operating under a similar lease to that of the Ontario Power Company. The Company was requested to define its position relating to all matters outstanding between the Company and the Commissioners.

It became known during the negotiations that the Ontario Power Company held the view that its rights to take water from the Niagara River were limited only to the capacity of the three eighteen-foot pipes provided for by its plans. The Commissioners' understanding of the application for rights and the agreements was that the Company's development should not exceed an ultimate limit of 180.000 electrical horse-power, and, therefore, the Ontario Power Company was notified that the question of the installation of the third pipe would be taken up on re-

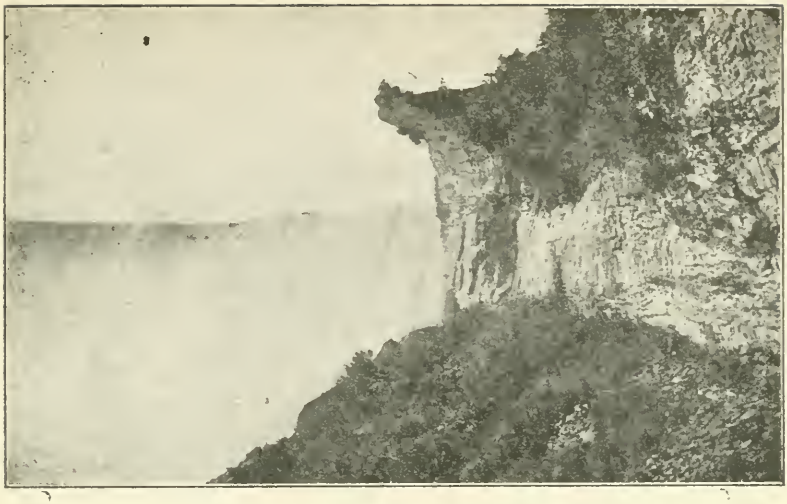
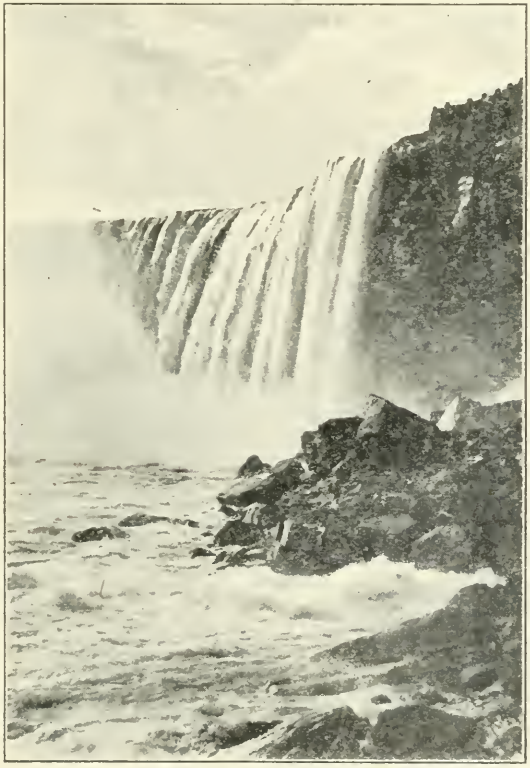


Table Rock, Horseshoe Falls, 1866.



Horseshoe Falls at Canadian shoreline.

ceiving proper assurances that it would not be used to develop a greater amount of power. This ended the negotiation on the part of the Company, and during the Session of the Legislature the Water Power Regulation Act, 1916, was passed. The Act will enable a settlement of such questions as those now arising between the Ontario Power Company and the Commissioners, and provides for compensation when any rights are restricted or cancelled.

In May, 1916, the Canadian Niagara Power Company asked for additional transmission conduits between its generating station and transformer station in Stamford Township. It was intimated that the location of industries in Canada supplied with power by this Company made it necessary to curtail the amount of power transmitted to New York State and turn it into Canadian channels. The first system of conduits had not sufficient capacity for the new conditions, and hence the necessity for extra cable space. Permission was given to extend the conduit system by the addition of a new underground transmission line.

In 1912 the Canadian Niagara Power Company represented that the water supply at its forebay was not proving satisfactory and that the completion of the Company's generating station would largely increase the ice difficulties in the winter season. Certain alterations and improvements to the forebay works were submitted and approved by agreement dated November 21st, 1912. In the early months of 1916 the Company gave notice of its intention to proceed with the works under the agreement, suggesting some modifications to the plans. It came to the attention of the Commissioners though that this Company also disputed the limitation placed upon its right to generate power, although it had been approved by the Commissioners at 100,000 electrical horse-power. Occasion was therefore taken in assenting to the modifications of works asked for by the Company to distinctly stipulate that they were sanctioned on the basis of an ultimate development of 100,000 electrical horse-power.

The Electrical Development Company in its franchise to take water from the Niagara River is definitely restricted to the quantity required for 125,000 electrical horse-power, and the power house within the Park is to be of a size and capacity appropriate for the machinery and appliances for such an ultimate limit. In the later months of 1916, when the daily power records were inspected, it was found that this Company had largely exceeded its contractural rights, reaching on peak load to a figure between 140,000 and 150,000 horse-power. The situation was at once reported to the Government and the Park Solicitor, and it will be dealt with in due course.

In the Thirtieth Annual Report the Commissioners referred to the negotiations for settling the dispute with the Ontario Power Company and the Electrical Development Company relating to additional rentals to be paid for power generated under franchises from the Commissioners and stated that they were still pending. At the beginning of the operating period of the Power Companies it was found that each had adopted a different practice in recording the amount of power generated. Thus one Company had graphic charts showing continuously the power being developed during the twenty-four hours. Another Company read at periodic intervals indicating meters, while a third Company used records from integrating meters. At the end of the year 1915 two Companies had graphic charts, and the third installed a graphic chart instrument on January 1st, 1916. While extensive study of the additional rentals dispute had been taking place during the litigation, the fact that the records from the companies were dissimilar rendered it impossible to make comparisons that were essential to a full understanding of the exact effect

of different systems of measurement. When all three Companies, therefore, obtained similar measuring instruments the Commissioners instructed the Superintendent, assisted and advised by Mr. R. A. Ross, Consulting Engineer of Montreal, to make a complete examination of the different measuring systems as applied to the Companies' output of power. Results were derived for momentary and one-minute peaks upon, first, the progressive peak system; second, the progressive peak system half-yearly; third, the average of the daily peaks; fourth, the average horse-power. The rental figures have been tabulated and give information that was formerly estimated, and it is now intended to deal actively with the additional rental matter. In the event of failure to agree with the two Companies, the Commissioners will proceed to a decision by litigation.

The Hydro-Electric Power Commission of Ontario advised the Commissioners that additional power would be supplied through the Canadian Niagara Power Company over and above the amount secured from the Ontario Power Company, and that a transmission line was necessary to convey the current outside of Park limits. Owing to the urgency for an immediate temporary supply, an overhead pole line construction was sanctioned for a period not exceeding one year, to be followed as soon as practicable by underground construction. Some difficulties arose between the Power Commission and the Company concerning the supply of power, and the underground work was not undertaken as soon as expected, but it is now proceeding and the aerial line will be removed early in 1917.

International Railway Company.

In October, 1915, the President of the International Railway Company requested consideration of an application which the Electrical Development Company had made in 1913 for an underground conduit system for transmitting power to New York State by a route running northerly through the Park to the Upper Steel Arch Bridge. The Commissioners, however, pointed out that no consideration could be given to the request while the Electrical Development Company was in default respecting its rentals.

Upon the report of engineers of the Ontario Railway and Municipal Board the International Railway Company was ordered to maintain its roadbed and structures in a more efficient manner. Between Bridge Street and the Upper Steel Arch Bridge in the City of Niagara Falls drainage and ballasting operations were carried on and partially completed. The renewal of the roadbed in Queen Victoria Park is to be undertaken in 1917.

Lease of Privileges.

In renewing the application for the lease of privileges at Table Rock House and the Park Restaurant, the Lessee stated that the restaurant business was unsatisfactory and failed to pay its proportion of the rental. The statement of gross receipts proved the truth of this contention, and it was, therefore, decided to separate the two businesses, placing the restaurant directly under Park control. The lease of Table Rock House for 1916 was arranged on the basis of a minimum rental of $12,000, with a percentage of the gross receipts in excess of $40,000. It was decided also to include a war clause providing for the cancellation of the lease prior to the end of the year in the event of military protection for the power plants becoming necessary. Later in the season the military authorities recommended the closing of a portion of Queen Victoria Park, and the Table Rock House was closed and the lease terminated.

Canadian entrance to Grand Trunk Suspension Bridge, 1866.

Grand Trunk Suspension Bridge, 1865.

The operation of the Park Refectory as a department of the Commissioners' administration has resulted in increased receipts from that point, and considerable improvement in the plant, although when the interest on investment is taken into consideration very little profit is returned. It will be the policy of the Commissioners to give to the public the very best service at a low cost. In the first year's operation no increases were made in the prices, while some were reduced. For the opening of the 1917 season new equipment is being purchased throughout, and the premises altered in many ways to meet the demands.

The Ontario Niagara Connecting Bridge Company.

During the 1916 Session of the Federal Parliament application was made for an Act to incorporate the Ontario Niagara Connecting Bridge Company with power to construct a bridge across the Niagara River between Niagara Falls City and Queenston. The Act as originally drafted did not seem to safeguard the interests of the Park, and amendments were proposed and accepted providing that the jurisdiction and control of the Park Commissioners under the Statutes of Ontario were not to be interfered with.

Queen Victoria Niagara Falls Park.

(Referred to as Queen Victoria Park and the Park Proper.)

When war was declared in August, 1914, the military authorities considered it expedient to place a small military guard in the vicinity of the power works in Queen Victoria Park, and as time passed this was enlarged and greater area covered. The action was taken not as a result of any request from the Commissioners, but upon the initiative of the military authorities themselves. The Commissioners, however, gave considerable thought to the question of protection, but held the view generally accepted in the early stages that the conflict would not be prolonged and that sufficient guarding was being provided. When it began to appear that war conditions might last for a number of years it was decided to request those responsible for military administration over the Niagara district to make a close examination and report any recommendations that they might consider necessary for the thorough and adequate safeguarding of the power plants. Following this request the General Officer Commanding Military District No. 2 made known his views and set forth certain definite plans that were considered essential. The Commissioners thereupon, and after advising the Government, complied with the recommendations and closed to the public some two miles of the Park Proper, including the whole area in which the three power companies' plants are located. After the closing order was put into effect the military guard was placed inside of the enclosure, and for winter quarters the Table Rock House, recently vacated, was turned over for the occupation of the troops. Considerable improvements were required and additional facilities for so large a body of men. All of the expenditure connected with this matter other than the maintenance of the guard is being paid for by the Commissioners.

Early in the year some movement was made to illuminate the Horseshoe Falls, and the Park Commissioners were approached for the purpose of gaining consent to the project. An illuminating plant had been erected to throw light across the American Falls, both from above and in the gorge below. It was felt, however, that illuminating the Canadian Cataract would not be in keeping with the present war conditions, and, therefore, the matter was not looked upon favourably.

The bronze tablet which it was decided to erect to the memory of Burrel Hecock, who lost his life February 4th, 1912, when the ice bridge in the gorge floated down the river and into the Whirlpool Rapids, has been erected at the end of the stone fence opposite Clifton Incline. It will serve to commemorate a brave deed in which a citizen of the United States lost his life.

The services of Mr. F. L. Olmsted, landscape architect of Boston, were retained to report upon several matters that will come prominently before the Commissioners in the near future. His report includes a permanent site for administration offices, the treatment of the terminal points of the aerial tramway, and forest conditions at Niagara Glen. The complete text will be found in the appendix.

Niagara River Boulevard.

The southerly end of the Boulevard along the Niagara River from Queen Victoria Park to Fort Erie was completed in the fall of 1915, and the new concrete roadway accommodated all of the traffic during 1916. Some work was done on additional grading and drainage along the Boulevard, and a large number of trees were set out both in the area already planted and in some portions not yet undertaken. It is satisfactory to note that all of the planting is progressing in a very favourable manner, and commencing to show results which will be more beautiful as the years go on and make the scenery along the Niagara River truly picturesque.

Receipts and Expenditures.

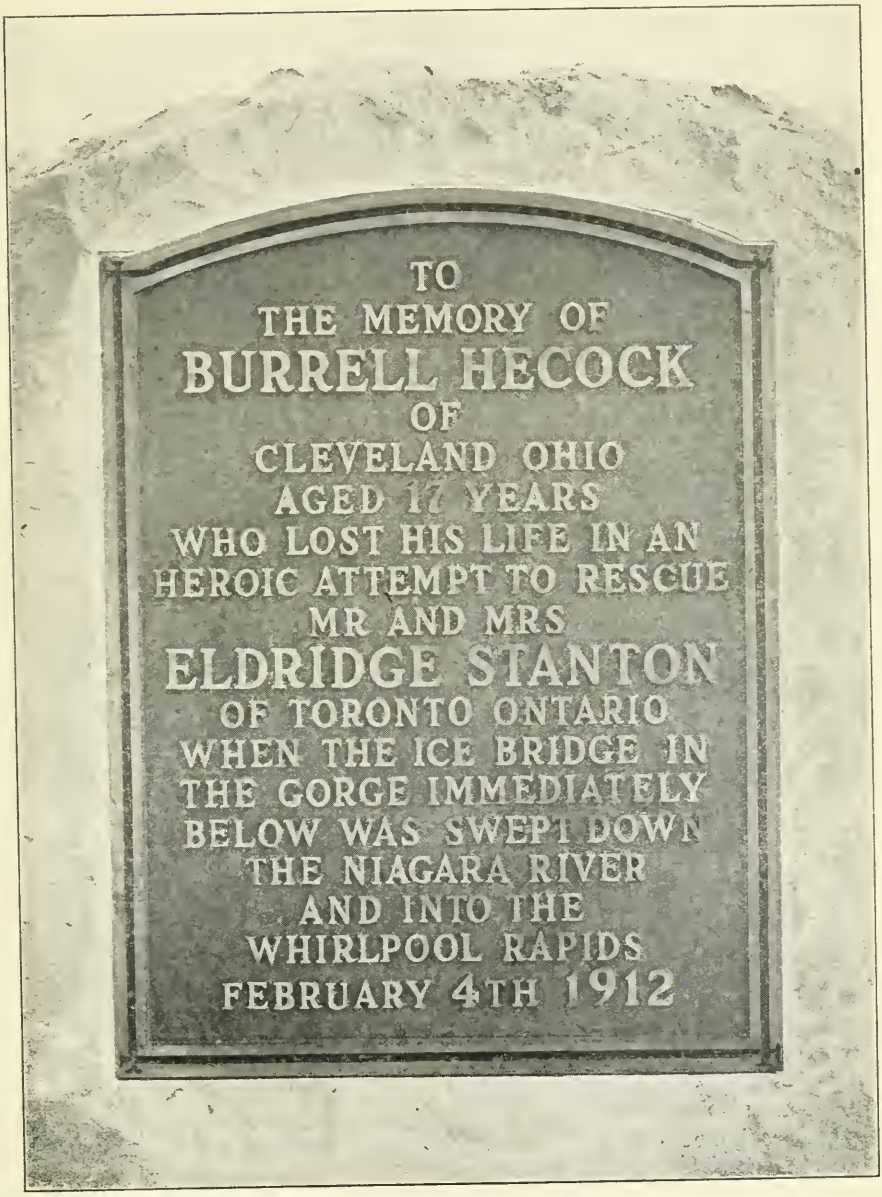
The accompanying statements show in detail the receipts and expenditures for the year. The rentals from the three power companies totalled $208,740.45, while in 1915 the amount received from these sources of revenue was $177,618.20. Upon Capital Account the sum of $30,466.36 was expended, the two main items consisting of the military barricade in Queen Victoria Park, and the balance owing upon Section No. 5 of Boulevard roadway construction. These two items amounted to $21,351.85. The maintenance expenditure comprised the usual items, including interest on debentures and a large payment upon sinking fund. The balance in the bank at the end of the year was $65,403.59, and there were balances in current accounts of $2,615.33.

Full reference is made in the report of the Park Superintendent to the various works of maintenance and improvement carried on throughout the Park System.

All of which is respectfully submitted,

P. W. Ellis, *Chairman.*
George H. Wilkes.
L. C. Raymond.
W. L. Doran.
L. H. Clarke.
J. D. Chaplin.
H. Y. Grant.

Niagara Falls, Ontario. March 7, 1917.



Bronze tablet erected to the memory of Burrell Hecock, 1917.

FINANCIAL STATEMENT, 1916.

RECEIPTS.

Balance in Imperial Bank, January 1st, 1916		$81,095 47
Ontario Power Company, rental	$30,000 00	
Ontario Power Company, additional rental	66,961 75	
Canadian Niagara Power Company, rental	15,000 00	
Canadian Niagara Power Company, additional rental	40,678 70	
Electrical Development Company, rental	15,000 00	
Electrical Development Company, additional rental	41,100 00	
International Railway Company, rental	10,000 00	
R. P. Slater, additional rental, 1915	2,881 16	
Niagara Spanish Aerocar Company, rental	1,750 00	
T. W. Midforth, rental, Queenston Heights	1,000 00	
T. W. Midforth, additional rental	400 00	
A. Brooker, rental, Whirlpool	50 00	
Maid of the Mist Steamboat Company, rental	500 00	
Lundy's Lane Burial Fees	242 00	
Niagara River Boulevard, Hay, Apples, etc.	301 71	
Interest on Deposits	2,218 48	
Sundries	154 56	
		228,238 36
		$309,333 83
Balances in Current Accounts:		
Queen Victoria Niagara Falls Park System	$1,000 00	
Queen Victoria Niagara Falls Park Restaurant	1,615 33	

EXPENDITURES.

CAPITAL ACCOUNT:		
Queen Victoria Park:		
Barricade and guard houses	$8,426 89	
Brick pavement extension	1,687 06	
Park lighting	1,051 81	
Dufferin Island improvements	477 80	
Office equipment	427 50	
Trees and shrubs	330 08	
Interphone to Carpenter Shop	197 97	
Drainage and water supply	177 48	
Park equipment	93 67	
Hecock Memorial	50 00	
Carpenter Shop	43 86	
Improvements to Administration Building	30 60	
		$12,994 72
The Restaurant—Equipment	$950 79	
		950 79
Queenston:		
General improvements	$57 92	
		57 92
Niagara Glen:		
General improvements	$125 65	
		125 65
Niagara River Boulevard:		
Section No. 5	$12,924 96	
Grading, draining and planting	2,647 00	
Lands and moving buildings	490 23	
Permanent surfacing	238 55	
Road crossings	18 45	
Road intersections	2 25	
		16,321 44

Lundy's Lane Burying Ground:		
General improvements	$15 84	
		15 84
MAINTENANCE ACCOUNT:		
Administration:		
Superintendent and staff	$13,730 70	
Office supplies	494 67	
Office expenses	679 37	
Travelling expenses	751 85	
Commissioners' expenses	180 68	
		15,837 27
Guards and Caretakers:		
Queen Victoria Park	$6,591 37	
Queenston	1,735 25	
Niagara Glen	605 56	
Whirlpool	683 59	
Lundy's Lane Burying Ground	683 30	
Fort Erie	456 52	
		10,755 59
Upkeep:		
Queen Victoria Park	$32,567 15	
Butler's Burying Ground	4 00	
Queenston	2,672 46	
Niagara Glen	671 81	
Whirlpool	10 08	
Chain Reserve	246 02	
River Road	934 35	
Lundy's Lane Burying Ground	735 10	
Niagara River Boulevard	12,416 37	
Fort Erie	6 10	
		50,263 44
Miscellaneous:		
Insurance	$630 56	
Legal	612 59	
Expert advice	2,818 03	
		4,061 18
Interest on Debentures		32,546 40
Sinking Fund		100,000 00
BALANCE IN BANK, DECEMBER 31ST, 1916		65,403 59
		$309,333 83

THE RESTAURANT, QUEEN VICTORIA NIAGARA FALLS PARK.

1916.		
Dec. 31.—Total Receipts for Season		$10,858 38
Total Expenditures:		
Management and wages	$2,569 65	
Supplies and sundry expenses	6,673 40	
		9,243 05
BALANCE IN IMPERIAL BANK		$1,615 33

MEMO.—Inventory of foodstuffs, $109.06.

STATEMENT OF DEBENTURE INDEBTEDNESS AS AT DECEMBER 31ST, 1916.

	Authorized.	Outstanding.	Interest Rate.	Date of Maturity.
Issue of 1887	$525,000 00	$525,000 00	4%	July 2nd, 1927
Issue of 1894	75,000 00	75,000 00	4%	July 2nd, 1927
Issue of 1908	100,000 00	100,000 00	3½%	July 2nd, 1927
Issue of 1909	200,000 00	135,000 00	4%	July 2nd, 1927

Statement Showing Amount of Sinking Fund and the Accrued Interest at 3%, Compounded Half-yearly, from July 1st, 1887, to June 30th, 1916.

	Debentures.	Date of Issue.	Sinking Fund.	Interest.	Total.
Issue No. 1	$525,000 00	July 1st, 1887	$152,250 00	$87,769 57	
Issue No. 2	75,000 00	July 1st, 1894	16,500 00	6,633 29	
Issue No. 3	100,000 00	July 1st, 1908	8,000 00	966 15	
Issue No. 4	200,000 00	July 1st, 1910	12,000 00	1,040 84	
			$188,750 00	$96,409 85	$285,159 85
December 31st, 1916.—Paid on account to date					200,000 00
Balance due					$85,159 85

SPECIAL SAVINGS ACCOUNT, 1903-1916.

For Maintaining Water Levels at Intake of Canadian Niagara Power Company and International Railway Company.

1903. January 31st—Deposited	$25,000 00	
1905. December 30th—Interest to date	2,288 41	
		$27,288 41
Less cost of submerged dam		2,189 32
		$25,099 09
1916. October 31st—Interest to date		9,552 13
		$34,651 22

REPORT OF THE PARK SUPERINTENDENT.

To the Commissioners for the Queen Victoria Niagara Falls Park.

GENTLEMEN,—I submit herewith my Ninth Annual Report detailing the activities in connection with the maintenance and improvement of the Queen Victoria Niagara Falls Park System for the year ended December 31st, 1916.

GENERAL.

The spring season of 1916 opened with an abundance of rain and continued very damp and cold up to the end of June, when the conditions were reversed and a dry period ensued until the late fall. Such conditions are most trying for the operating and maintaining of a system of parks and boulevards, calling as they do for additional help at a period when many things have to be done hurriedly to open the Parks to tourists and visitors. Large amounts of rain added to the natural spray conditions at Niagara Falls leave the lawns and grass areas in a condition almost impossible to work upon, and advantage must be taken of every fine day to keep the sward cut. An extreme dry period, while not quite as trying, requires considerable effort in lawn watering to keep the appearance of things pleasing to the eye.

The effect of enlisting large numbers of able-bodied workmen for military service, together with the demand for munition workers and labourers of practically every class, has brought conditions in the Park to the point where applications for work are not received, and efforts have to be put forth to obtain men for the service. Wages for ordinary labour have had to be advanced all the way from twenty-two cents an hour to over thirty cents an hour, representing an increase of between thirty-five and forty per cent., and the coming season will see a higher scale of wages if the outside demands upon the labour market are not curtailed. During the twelve months a number of good workmen have been lost through death and the obtaining of better positions, and under these circumstances it is satisfactory to note that all of the maintenance work has been kept up to a proper standard, comparing well with other Parks either in Canada or the United States. It has been necessary, however, under the difficult conditions to retain most of the outside employees throughout the year instead of reducing the force for the winter months, but this has been accomplished by laying out a small amount of improvement work for time not occupied in ordinary upkeep.

As in 1915 the estimates of expenditures both upon capital and maintenance accounts were reduced to the lowest scale consistent with economical administration, and upon capital account only small sums were used except for the erection of a barricade around the zone of the power works in Queen Victoria Park, and to pay for balances on contracts upon road construction. General administration cost $15,837.27, guards and caretakers $10,755.59, general upkeep $50,263.44, miscellaneous items $4,061.18, and interest on debentures $32,546.40.

QUEEN VICTORIA PARK.

Since the Park System was organized in 1887 the operation of facilities for visitors has been leased either at fixed rentals over a term of years or upon rentals based upon the gross receipts taken in, but a departure was made in 1916 by the Commissioners adding the Park Restaurant at Queen Victoria Park to the operating department of the Park itself. This action was decided upon after the com-

Murray Hill Road, washed out, July 2, 1916.

mencement of the year upon the representation of the Lessee that he had been unable to make the business pay, and, when taxes and rentals were considered, that money was lost. In taking over the restaurant there was no opportunity to purchase a new plant, and that of the Lessee was, therefore, acquired. Many improvements that were desirable had to be left in order to get the business running by the opening of the spring season. Where it would not obstruct the service, however, repairs and renewals were undertaken, and altogether not only the appearance, but the actual operation of the business was much improved. The manager that the Lessee had had was obtained, he having had experience in the class of business to be accommodated. The total receipts amounted to $10,850.38 and the total expenditures $9,243.05, leaving a balance of $1,615.33. This balance does not provide an adequate rent for the premises or interest upon the investment, but as the aim is to give first-class service at a low cost the results may be considered quite satisfactory. For 1917 a complete new dining-room plant is being secured, and the whole restaurant is receiving attention to bring it up to a first-class condition. Consideration is also being given to the installation of additional facilities, particularly a soda fountain and an ice plant for the refrigerators. These additions will only be installed in case a saving in expenditure can be shown.

Both the exterior and interior of the Administration Building were painted throughout, the exterior having received attention in 1911. The work was done by day labour under supervision of the Park staff, and the cost compares favourably with contract work. Much difficulty has been experienced in the winter season with certain portions of the roof of the Administration Building owing to the accumulation of ice and the water coming down through the walls and a portion of the ceilings. In spite of repairs this condition has not been entirely eliminated, and it will be necessary to remove certain portions of the roof and rebuild them.

When the Board adopted the recommendation of the military authorities for the closing and barricading of Queen Victoria Park from the Administration Building to the Burning Springs Hill, it was necessary to make a study of the best method of obtaining the desired results. In consultation with the military engineers it was at first decided to erect a barbed wire fence for the length of practically two miles of the Park area. Many difficulties, however, presented themselves to this plan owing to the location being through a broken rock formation and for one length along a brick pavement. Various substitutes for this class of construction were considered, and finally, with the approval of the military authorities, an ordinary trench barricade was decided upon, this being a simple type of construction that has proved very effective in warfare. It had the advantage of being built upon the surface of the ground without anchors, which would require excavation, and although not as neat in appearance as a fence it is more difficult to pass through. The barricade is lighted throughout its length, the current being supplied free of cost by the three power companies. At the entrance gates, houses have been built for the guard and telephones installed so that quick means of communication are provided. In addition to this some bunk houses have been erected and the Table Rock House, recently used as the headquarters of a souvenir business, and the entrance to the tunnel, extending back to the Horseshoe Falls, has been given over completely to the military guard. Facilities for the soldiers have been provided and the whole of the building is being occupied. The materials for the barricade were purchased by the Park, and the erection was done by contract.

By far the most disastrous washout that has occurred in the Park in recent years happened on July 2nd, when in the late afternoon a cloudburst and terrific

rain storm occurred in the vicinity of Niagara Falls. So tremendous was the deluge that the whole of the roadway at the Murray Street entrance was washed out for a distance of 1,000 feet. Great excavations were made and large rocks and stones hurled with terrific force through the grove of trees immediately north of the Administration Building. Trees were uprooted by the rushing waters and immense damage was done. Fortunately no buildings were in the route taken by the torrent, and, therefore, the trees, lawns and roadways alone were injured. Many tons of material were brought down the hill side, and much money had to be expended to return it to its original position. No ordinary drainage system would have taken the water, and it does not seem desirable to spend money to prevent future recurrence of a similar event.

When the forebay of the Ontario Power Company was located at the mouth of the Dufferin Islands channel leading from the Niagara River, the quantity of water traversing the channel was materially reduced, and to restore the scenic effect a number of weirs were built and artificial islands constructed. Some of the submerged dams became undermined and allowed the water levels to drop, leaving the appearance quite unsightly. In unwatering the whole channel it was found that much silting of the pockets upstream from the weirs had taken place, and in fact this was evident from the growth of vegetation that is usually found in shallow water. Much of this material was removed, although sufficient time was not available for completing the cleaning out. It appears that this channel might be greatly improved by reconstructing the barriers and making them more irregular in shape. The Dufferin Islands, surrounded by the channel above referred to, had the work of clearing out the dead wood and useless trees continued during the winter and early spring months. This work is almost completed and the beneficial results are already being seen.

The usual spring display of Calceolarias was held at the Park Greenhouses, but the fall showing of Chrysanthemums had to be abandoned owing to the closing of the Park in that vicinity. The plants, however, were removed to the Niagara Falls rink and there shown to the public, the proceeds of admission and sale of flowers being devoted to Red Cross work.

An additional report was obtained from Mr. Olmsted on some important works in connection with the Park. Considerable study was given to the location of Park offices for the whole system, and resulted in the selection of a site between Murray Street and Robinson Street adjoining the present westerly limit of the Park proper. Although it is not expected that this building will be erected at the present time, it is considered advisable that a discussion on the subject should take place for future reference. It was also considered that the land available at this point would serve as an overflow for games and amusements where the present Park area is limited.

Another important examination was that in connection with the forest growth at Niagara Glen and along the escarpment. A close study revealed the fact that fires of some years ago have done immense damage at this point, and have retarded the growth of many trees which were undoubtedly partly affected by the heat and smoke. It would seem to be good policy and economy to not only have a thorough patrol of the natural forest area but to install fire apparatus that could be quickly used for putting out fires as soon as discovered.

The original drainage system of the Park was constructed in a great many instances with stone drains emptying over the cliff, and as time goes on these are falling in and reducing the water area so that they are practically useless. Several

Dufferin Islands elbow.

Old dock, Black Creek, Niagara River Boulevard, to be removed.

of these structures were renewed with tile, and as sanitary requirements are brought into prominence and enforced, it will be necessary to construct a complete sewer system either in conjunction with the City of Niagara Falls system, or as a separate unit. The underground drainage along the foot of the escarpment was also continued in the wet areas. Each addition to this system makes that portion of the Park more usable for the public.

A new footpath was constructed from the southerly shelter building to Murray Street connecting the Park pathway system.

One accident occurred during the year when a carpenter's helper fell in the carpenter shop and broke his leg. Unfortunately complications set in and the man died. Although the Park is not under the jurisdiction of the Workmen's Compensation Board the case was referred to that tribunal for a decision respecting the amount which the Commissioners would be liable for as in the case of a private employee. An award of $20.00 a month was given to the widow, and is being paid.

One serious automobile accident occurred on July 21st, when a driver in the early morning came into the Park from the south, evidently at a very high speed. Failing to make the turn at one of the bridges on the road system the car dashed into the Dufferin Islands channel, and the occupant was saved only by reason of the automobile coming to rest at a small island. The cause of the accident appears to be due entirely to carelessness.

Queenston.

Brock's Monument at Queenston Heights Park, which was closed to the public in July, 1915, has not been reopened and the revenue from that point, amounting to from $1,500 to $1,800 a year, has been lost. The shaft is kept guarded both day and night, the military picket undertaking the work from sundown and a Park employee looking after the entrance in the daylight hours.

The removal of dead trees and the pruning of tree growth has made substantial progress at this Park, and it is satisfactory to note that men have been trained to do the work without the aid of outside expert assistance. In the grove immediately south of the restaurant building, which is used largely for picnic purposes, the scouring from rain storms and the continual wear and tear from many people tramping over the ground has uncovered the root systems of the trees to such an extent that they were dying for lack of food. To rectify this a large amount of soil was brought in and spread over the area.

Outlying Parks.

The trees planted on the upper plateau at Niagara Glen have made splendid progress and will add much to the beauty of this point as they develop. Unfortunately several fires occurred on the upper level, principally as a result of the carelessness of smokers, and they were only prevented from spreading to the natural tree growth below the bank with the greatest difficulty. A very serious and disastrous fire took place at Thompson's Point owing to carelessness in igniting fires among dry tree growth in the late fall. These fires are started with no thought that a strong wind may rise, and when after some hours such a wind unexpectedly comes, even if the fire has been practically extinguished, the least spark will be fanned into flame, and in an astonishingly short period of time the fire is beyond control. Unfortunately the damage is far greater than is indicated to the eye.

because the heat in many cases cooks the outside layer of the trees and it is only by tremendous resisting power and the elapse of time that this is overcome.

Planting was continued at Lundy's Lane Cemetery, and undoubtedly this elevation, the highest point in the City of Niagara Falls, will become a splendid growth of trees instead of the barren ground that was taken over by the Park. The funerals average from fifty to sixty per year, and it seems that some persons are disposing of their plots at high prices owing to the fact that the cemetery is cared for by the Park Commissioners at no cost to owners. Maintenance of the usual character was carried on at the other outlying points.

Niagara River Boulevard.

One of the problems that has not been completely solved along the Boulevard roadway is the maintenance of the gutters and clay shoulders adjoining the macadamized area. To allow grass to grow on these two widths decreases the efficiency of the drainage system, and also narrows up the road in appearance. The use of various solutions for killing the growth has not been satisfactory and costs a great deal of money. When the traffic becomes sufficiently dense to warrant the widening of the roadway beyond the present eighteen feet, this difficulty will disappear, but in the meantime hand weeding has had to be resorted to.

The southerly part of Section No. 3 of the roadway, immediately north of the shipyard property, was partially resurfaced during 1916, it having been one of the first lengths to receive bituminous treatment, and having had no renewal. It was used for the purpose of testing out the length of time that the carpet treatment would wear before disintegrating entirely. Besides this resurfacing the ordinary patching at various points where small areas had given way under the traffic was carried on to keep the road in a good state of repair. Some additional drainage was put in to relieve the water coming on to Park property from the west, and much benefit has resulted to the roadway itself. The signs specifying the maximum speed for vehicles posted along the road are not being obeyed, although the tendency toward sane driving of motor cars appears to be gaining ground. Nevertheless it is desirable to have a motorcycle policeman to see that this evasion of the By-Laws and other practices are kept within control.

There are still several houses to remove or tear down, but no satisfactory offers have been received for them, and they have been allowed to stand. In place of erecting a new storehouse at the point intended north of Black Creek, an old building is being used south of that point and will answer for a season or two.

The tree planting has been continued during both spring and fall, over seven hundred trees having been set out, besides large numbers of shrubs at the bridges and other advantageous locations. For the most part the trees were taken from the bush adjoining the boulevard at a very moderate cost.

The concrete roadway through the Villages of Bridgeburg and Fort Erie was accepted from the contractor, and is a good example of that type of construction. Some of the usual cracking has developed, but not to an extent that is at all alarming. Owing to the lack of labour the street intersections were not proceeded with and that work still has to be undertaken.

Aerial Tramway.

The aerial tramway across the Whirlpool from Thompson's Point to Colt's Point was completed in July, 1916, and subjected to the tests for strength required by the Public Works Department of Ontario before opening for traffic. Both

terminal points have been treated to accord with the surrounding areas, and at Thompson's Point considerable landscape operations were undertaken for the purpose of keeping the top of the machinery chamber at the grade of the surrounding grounds. Considerable quantities of earth were hauled in, new paths constructed, and trees planted. The Lessees co-operated in all of this work and bore the main part of the expense. In blasting for the terminal chamber at Thompson's Point it was found impossible to protect the trees below the bank from serious harm, and, therefore, the Aerial Tramway Company was made responsible for replanting the area damaged. Large numbers of seedling evergreens were set out in earth pockets, but unfortunately the number remaining alive is very small and the work will have to be repeated.

Power Companies.

A great deal of time was spent in examining the load charts of the three Power Companies for the purpose of preparing a report to show various phases of the additional rental dispute. Rentals were calculated upon the basis of momentary and one minute peaks for the progressive system of measurement, the progressive system half-yearly, the average of the daily peaks and the average horse-power.

The Canadian Niagara Power Company has built a new underground conduit system for the transmission of electrical current from its generating station to its transformer station in Stamford Township. The main portion of the conduits follow the route of the former conduit, but in ascending the escarpment side armoured cables are used and laid without earthen pipe protection.

The Canadian Niagara Power Company, after obtaining permission from the military authorities, was allowed to proceed with the improvements to its forebay, including the deepening of the entrance, the construction of a new ice fender, and some alterations to the ice sluiceway. This work has been under way, and it is expected to be completed in 1917. Three new units have been installed, namely, Numbers 8, 9 and 10. The total apparatus installed now includes the following:

Unit.	Capacity.	Date of Operation.
1	10,000 horse-power	July 27, 1905.
2	10,000 "	Sept. 11, 1905.
3	10,000 "	Sept. 27, 1905.
4	10,000 "	April 21, 1906.
5	10,000 "	May 17, 1906.
6	12,500 "	Dec. 5, 1910.
7	12,500 "	July 28, 1913.
8	12,500 "	Sept. 7, 1916.
9	12,500 "	Oct. 22, 1916.
10	12,500 "	Jan. 13, 1917.

The Ontario Power Company, with two of its main conduits constructed and in operation, has the following apparatus installed:

Unit.	Capacity.	Date of Operation.
1	10,000 horse-power	July 1, 1905.
2	10,000 "	July 1, 1905.
3	10,000 "	July 1, 1905.
4	12,000 "	Nov. 5, 1906.
5	12,000 "	Jan. 18, 1908.
6	12,000 "	Jan. 18, 1908.
7	12,000 "	Sept. 10, 1909.
8	13,000 "	Dec. 22, 1910.
9	13,000 "	April 12, 1911.
10	13,000 "	July 30, 1911.
11	13,000 "	March 3, 1913.
12	13,000 "	June 3, 1913.
13	13,000 "	Dec. 30, 1913.
14	13,000 "	Jan. 28, 1914.

The Electrical Development Company has completed its power house and the installation of its machinery for the generation of 125,000 horse-power, the amount allowed under its contract. The following apparatus is installed:

Unit.	Capacity.	Date of Operation.
1	13,400 horse-power	April 1, 1915.
2	13,400 "	Jan. 30, 1915.
3	13,400 "	Nov. 6, 1914.
4	13,400 "	Nov. 2, 1913.
5	13,400 "	May 28, 1912.
6	13,400 "	March 31, 1912.
7	13,400 "	Jan. 27, 1912.
8	10,700 "	Nov. 19, 1906.
9	10,700 "	Jan. 5, 1907.
10	10,700 "	Oct. 11, 1907.
11	10,700 "	May 28, 1907.

Respectfully submitted,

JOHN H. JACKSON.

Superintendent.

Niagara Falls, Ontario, March 7th, 1917.

ROADWAYS—COST DATA.

The following information has been tabulated from the results of construction and maintenance work performed in the Park System. Considerable detail is shown, so that comparisons may be made with other similar works.

CONCRETE PAVEMENT.

SECTION NO. 5A.—BRIDGEBURG.

Area of concrete surface	10,430 sq. yds.
Width of concrete surface	18 ft.
Thickness of concrete	Sides 6 in., middle, 8 in.
Area of cross section	11.125 sq. ft.
Sub-grade	Flat.
Concrete mixture	1—2—3.
Cost per sq. yd. concrete surface	$2.13.

Costs.

	Labour.	Material.	Total.	Cents per sq. yd.
Grading	$3,361 00	$ 27 00	$3,388 00	32.5
Drainage	576 00	503 00	1,079 00	10.3
Concrete	4,058 00	9,410 00	13,468 00	129.3
Curing, etc.	471 00	.....	471 00	4.5
Shoulders	674 00	1,009 00	1,683 00	16.1
Cement tests	88 00	.....	88 00	.8
Inspection	288 00	.....	288 00	2.7
Engineering	560 00	.....	560 00	5.4
Incidentals	803 00	357 00	1,160 00	11.1
	$10,879 00	$11,306 00	$22,185 00	212.7

Reinforcement:

1,577 square yards of pavement reinforced with expanded metal cost $295.00= 19c. per sq. yd.

Shore Protection:

1,000 lineal feet of riprap placed at a cost of $1.17 per lineal foot.

Macadam Roadway:

600 square yards of macadam, 18 feet wide put down for $588.00=98c. per sq. yd.

Excavation:

Amount of earth secured from cutting	1,162 cu. yds.
Amount of earth borrowed	2,512 cu. yds.
Total amount of fill used	3,674 cu. yds.

CONCRETE PAVEMENT.

SECTION NO. 5B.—FORT ERIE.

Area of concrete surface	7,129 sq. yds.
Width of concrete surface	18 feet.
Thickness of concrete	Sides 6 in., middle 8 in.
Area of cross section	11.125 sq. ft.
Sub-grade	Flat.
Concrete mixture	1—2—3.
Cost per sq. yd. of concrete surface	$2.11.

Costs.

	Labour.	Material.	Total.	Cents per sq. yd.
Grading	$1,637 00	.....	$1,637 00	23.0
Drainage	362 00	$ 366 00	728 00	10.2
Concrete	3,001 00	7,779 00	10,780 00	151.2
Curing, etc.	197 00	.....	197 00	2.8
Shoulders	355 00	284 00	639 00	9.0
Cement tests	51 00	.....	51 00	.7
Inspection	170 00	.....	170 00	2.4
Engineering	317 00	.....	317 00	4.4
Incidentals	270 00	232 00	502 00	7.0
	$6,360 00	$8,661 00	$15,021 00	210.7

Reinforcement:

1,434 square yards of pavement reinforced with expanded metal cost $278.00= 19¼c. per sq. yd.

Shore Protection:

106 lineal feet of riprap placed at a cost of $1.17 per lineal foot.

Excavation:

Amount of earth secured from cutting	916 cu. yds.
Amount of fill required	862 cu. yds.
Amount of earth available for Sec. 5a. fill	54 cu. yds.

CONCRETE PAVEMENT.

Section 5 Complete.

From Bowen Road, Bridgeburg, to Ferry Landing, Fort Erie.

Area of concrete surface	17,559 sq. yds.
Width of concrete surface	18 ft.
Thickness of concrete	Sides 6 in., middle 8 in.
Area of cross section	11.125 sq. ft.
Sub-grade	Flat.
Concrete mixture	1—2—3.
Cost per sq. yd. of concrete surface	$2.12.

Costs.

	Labour.	Material.	Total.	Cents per sq. yd.
Grading	$4,998 00	$ 27 00	$5,025 00	28.6
Drainage	938 00	869 00	1,807 00	10.3
Concrete	7,059 00	17,189 00	24,248 00	138.1
Curing, etc.	668 00	.....	668 00	3.8
Shoulders	1,029 00	1,293 00	2,322 00	13.2
Cement tests	139 00	.....	139 00	.8
Inspection	458 00	.....	458 00	2.6
Engineering	877 00	.....	877 00	5.0
Incidentals	1,073 00	589 00	1,662 00	9.5
	$17,239 00	$19,967 00	$37,206 00	211.9

Reinforcement:

2,991 square yards of pavement reinforced with expanded metal, cost $573.00= 19.2c. per sq. yd.

Shore Protection:

1,106 lineal feet of riprap cost $1,291=$1.17 per lineal foot.

MAINTENANCE OF ROADWAYS, 1916.

Niagara River Boulevard.

Tarvia "A" Treatment.

Time ..... September, 1916.
Location ..... Station 660 to 800—Shipyard to Bridgeburg.
Average haul ..... 1½ miles.
Surface treated ..... 18 feet wide, 14,000 feet long—28,000 sq. yds.

Labour.	Total.	Per sq. yd.
Teaming ½ in. stone	$192 20	.69
Loading and spreading stone	157 50	.56
Sweeping and brushing roadway	29 30	.10
Heating Tarvia	112 90	.40
Distributing and rolling	27 10	.10
Miscellaneous	24 00	.09
	$543 00	1.94c.

Materials.		
½ in. stone chips, 348 tons at $1.10	$383 00	1.37
Tarvia "A," 6,500 gals. at 10c.	650 00	2.32
Freight, $115, car service, $19	134 00	.48
Coal, 19.7 tons at $7.00	138 00	.49
	$1,305 00	4.66c.

Summary.		
Labour	$543 00	1.94
Materials	1,305 00	4.66
	$1,848 00	6.60c.

Cost per sq. yd. ..... 6.6c.
Cost per mile (18 feet wide) ..... $700.00.
Distribution of Tarvia ..... .23 gals. per sq. yd.
Distribution of stone chips ..... 1 cu. yd. on 97 sq. yds.

Wage rates—Teams ..... 45c. per hour.
Labourers ..... 20c. " "
Foremen ..... 30c. " "

REPORT OF CHIEF GARDENER.

To the Superintendent of the Queen Victoria Niagara Falls Park System.

DEAR SIR,—The report submitted herewith is that of the chief operations, including improvements undertaken during the year 1916 in the Horticultural Department.

THE PARK PROPER.

The weather of 1916 was rather disastrous to the flowers, shrubs and trees in the Park System, but more especially in the Park proper, where ornamental subjects are largely used. The Spring season was very wet and unfavorable for planting operations, consequently the work was greatly retarded. Through this cause bedding was not completed until the end of June.

On the evening of Sunday, July 2nd, one of the worst rain and wind storms experienced in this district almost completely ruined the flowers in the beds and borders. Many beds were totally buried by earth, stones and other debris, brought down from the escarpment by the torrent. Considerable stretches of walks near the Administration Building were washed out to the solid rock, which alone prevented their total destruction. The wind which accompanied the rain damaged a few of the trees, some large limbs being torn away. Fortunately, on the whole, they did not suffer greatly, being protected to a great extent by the westerly escarpment, which happily was to the windward.

It was not until the end of August that all traces of the storm were removed, although by the end of July the beds were refilled with plants, the broken limbs removed from the trees, and most of the debris hauled away.

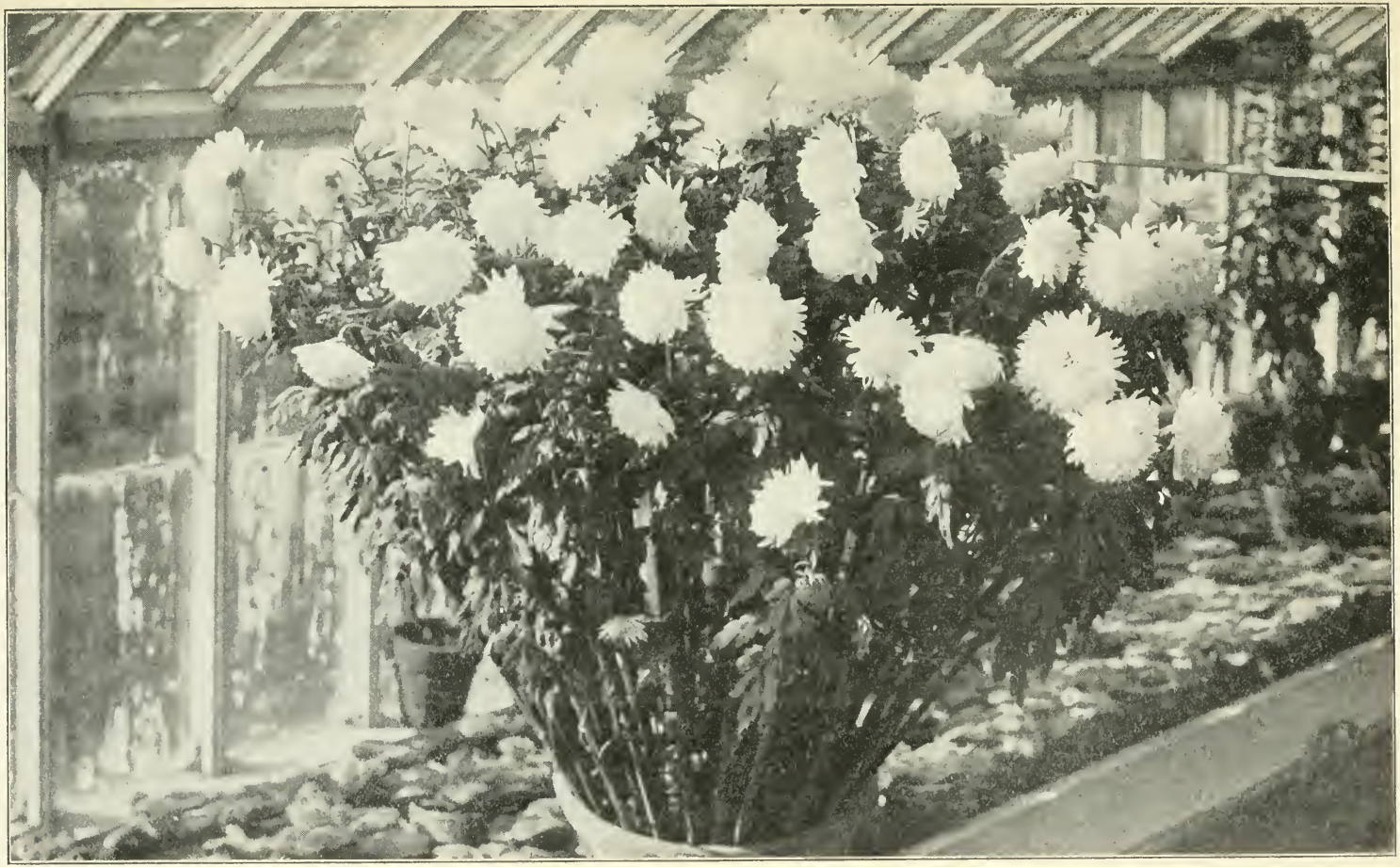
The late summer and fall months were extremely dry. The drought had a harmful effect, especially upon the evergreens, and the newly planted deciduous trees. Much watering and cultivation was thus necessitated. In spite of all disadvantages, however, very few trees succumbed. Toward winter numerous lower branches on the evergreens turned brown, and later died. These were removed, and the cause of this may reasonably be attributed to the drought.

The usual spring and fall displays of flowers were made. The fall Chrysanthemum display was held in the interest of the Canadian Red Cross. As the protective precautions of the power zone prevented access to the greenhouses, the flowers were shipped to the City Skating Rink, kindly let by the Directors.

Experimental Work—In accordance with the custom of experimenting with a special group of plants, the tender Primula was chosen. The data relative to the experiment was submitted to the Nomenclature Committee of the Ontario Horticultural Association, and was approved for publication in the Annual Report of that body for 1916.

Running concurrently with the foregoing, other experimental work relative to the hardy and half hardy Primulas was conducted during 1916. As, however, this will be a three or four years' undertaking, no data can at present be published.

In the course of the experimental work of past years, several previously unrecorded plants of merit have originated in the greenhouses. Two plants, one a variety of Primula floribunda, and the other Primula verticillata, and respectively named "Milkey-way" and "Cremona," have during 1916 proved very promising. The flowers of each are a pale creamy white color, differing greatly from the deep yellow of the species.



Bush Chrysanthemum, Queen Victoria Conservatories.

Saving a Park tree.

Hybridising—The improvement by hybridising of the Calceolaria, Begonia, and the tender Primula, was continued in 1916. As a result of this work in past years, a few hybrids of promise have been produced. These were tested during the year, with the result that several have proved excellent for greenhouse decoration, and a few as bedding subjects.

With the Calceolaria, parhaps, the most important work was done. It was undertaken with the desire to again bring into popularity this wonderfully beautiful genus of plants. Numerous improved varieties have resulted. They cannot at this time be named, as many of the types are not yet fixed. Among the fixed ones, however, may be mentioned "Snow Queen," a rare and beautiful creamy white flowered plant.

Care of the Trees.—With the variety of trees and shrubs in the Park System, it is natural that there should be many insect and other pests, and that their control be difficult. The scale insects, especially the San José and the Oyster Shell, proved very troublesome. They have spread to an alarming extent through the bush lands adjoining the Park System, over which we have no control. This state of affairs renders strict vigilance and careful spraying essential. During 1916 the infested subjects were sprayed with soluble lime-sulphur. In occasional cases where spraying would not avail, the shrubs were removed and burned.

The Woolly Aphis, although not usually troublesome to us, appeared on the Catalpas, and also on a few shrubs with dense foliage. In late June and July it became very unsightly, although it did little damage. One spraying with kerosene emulsion was effective, this being done on a dull day, so that danger of burning of the foliage was reduced to a minimum.

The Tussock Moth, considerably less frequent than in previous years, was easy to control. The Gyspy Moth, however, appeared to have increased and worked havoc on the Black Walnuts. The larger trees, where impossible to reach the Caterpillars, were almost completely defoliated. The damage was done during late July and early August, therefore the trees leafed out again, this being customary with the trees during the years the pest attacked them. The smaller trees to a height of thirty feet were saved from attack. The Caterpillars were collected and destroyed, a keen search being made twice a week during the season of their depredation.

A report of operations in the Park proper would be incomplete without mention of the work in connection with the preservation of the trees. Were it not for continual observation and the detection of disease, many of the large specimens would be damaged, or would totally collapse during wind storms or under the pressure of ice, which collects on their branches. A few large trees were found to be in an unsafe condition, being badly diseased near the ground line. From these, the dead wood was removed, and the cavities treated and filled along the lines of approved methods of tree surgery.

A disease, probably "Black Knot," which for the past few years had confined itself to a few of the maples, began to spread and to cause some alarm, therefore methods for its control were employed during the year. Badly diseased branches were removed and burned, and should this fail to check the fungus, the few infected trees will be uprooted and destroyed.

The Boulevard.

The Spring season not being conducive to planting, little of this work was done along the Boulevard. The Fall season was much more favorable, and large numbers of trees and shrubs were planted. This, with the staking and mulching, was practically all the new work undertaken.

The work of maintenance comprised: the cutting of an exceptionally heavy hay crop, the trimming of the young trees, the earliest planted of which by this time have assumed large proportions, the cultivation of the soil around them, and the very necessary operation of watering. The cultivation of the hard clay soil was undertaken to conserve the soil's moisture during the exceedingly dry fall months, and to render a better diffusion possible of the water which was applied to sustain the trees.

From the willows along the river bank the dead branches were cut away, and in places where views could be opened to advantage the trees were removed. This was desirable for another reason. The more or less straight line of willows, evidently planted to prevent erosion, too largely predominate, and obtrude themselves to the subordination of that which is natural and desirable.

Queenston Heights.

The resurfacing during fall of the area most frequented by picnic parties, and which is covered with shade trees, was perhaps the most important operation of the year in the Queenston Heights Park. In the case of nearly every tree, the soil had been so worn away that the conducting roots and often the fibrous ones were exposed. These were substantially covered with good loam. The area was fenced off, so that an opportunity will be given for the trees to recuperate and for the grass, when the ground is seeded, to again become established.

The Whirlpool.

At the Whirlpool, owing to the operations of the Spanish Aerocar Company, a scar was made on the face of the cliff known as Thompson's Point. Many of the trees, evergreen and deciduous, were destroyed by falling rocks. In order to restore the vegetation, trees native to the locality were planted. The work was exceptionally arduous, as little soil existed among the rocks. The evergreens, three hundred and fifty in number, had to be potted in soil in paper pots. The holes for these being made with the pick. Without the aid of ropes, planting would have been impossible, there being no other way to lower the trees, or to enable the men to maintain a footing. A few deciduous trees were planted in favorable positions.

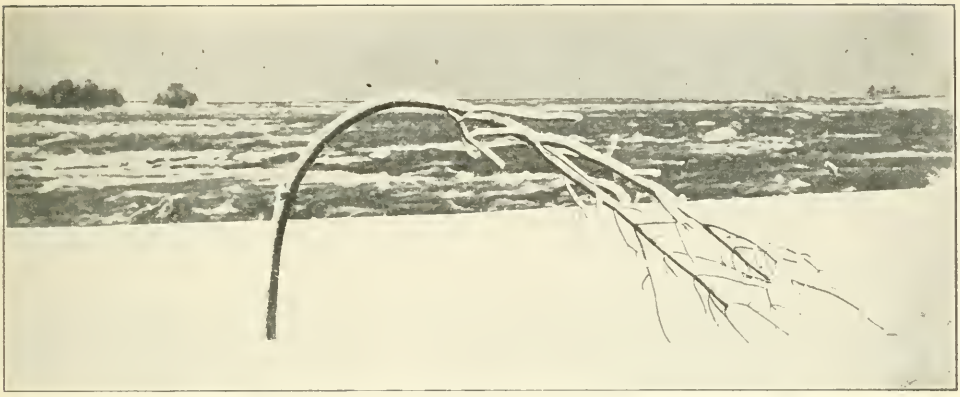
The small parkway on the upper level of Thompson's Point was redesigned to be in keeping with the changes recently made by the building operations, and to provide facilities for the people to enjoy the scenery at the Whirlpool. The necessary planting, unfortunately, in order to conform to the requirements of the buildings, had to be somewhat formal.

Respectfully submitted.

H. J. Moore,

Chief Gardener.

February 23rd, 1917.



Tree bent to the ground by ice accumulation, Upper Rapids in the background.

Elm tree, Queen Victoria Park, damaged by storm, July 2, 1916.

REPORT OF FREDERICK LAW OLMSTED ON

1. Site for Administration Offices.
2. Provision for Games and Amusements.
3. Location of No. 3 Overflow Building.
4. Aerial Cableway at the Whirlpool.
5. Forest Conditions in Niagara Glen.

To the Commissioners of Queen Victoria Park.

1. Site for Administrative Offices. 5th May, 1916.

In view of the need for new and increased office accommodations for the park administration, as stated by your Superintendent, I have given thoughtful consideration to various possible sites for a new office building. Eliminating the land near the Falls as unavailable on account of dampness, apart from all other reasons, I considered the possibility of a site in the Park between the present refectory and the Clifton Hotel. As far as concerns convenience and the minimizing of expense, such a site would be excellent, but there are the most serious objections to it from other points of view. The convenient and economical conduct of the administrative business of the Commission is very important; but its importance is not as an end in itself—only as a means to an end. The real end is primarily to provide for the enjoyment of the scenery of Niagara Falls by the public under the most favorable conditions practically obtainable. With a view to that end, it is plainly desirable not to occupy or encumber the limited margin of land along the brink of the Gorge near the Falls by avoidable buildings. In this locality the first question in regard to any proposed construction or change of any kind, great or small, should always be, "Will it actually contribute to heightening and strengthening the impression which the great natural spectacle makes upon the beholder?" If not, the second question should be, "Is it necessary to the safety, convenience, or comfort of the public which come here to enjoy the spectacle of the Falls, and is there no other practicable way of accomplishing the purpose which would do less to weaken or confuse the impression of the spectacle upon the beholder?"

Clearly it would not help the impressiveness of the scenery nor is it necessary to the safety, convenience, or comfort of visitors to the Falls to have an office building for the park administration intruded into this peculiarly valuable park space. Its erection could be justified only if there were no practicable alternative.

One alternative which was discussed with me is to place the building somewhere to the southeast of the Falls, where the park land is wider and where the building could be practically hidden. While this would be less objectionable from the point of view of the park public, it would also be less convenient for the occupants of the building and those doing business with them.

Another alternative is a site on top of the bluff just outside the existing park boundary a short distance from the present offices in the Refectory. Here the building would be wholly outside of the landscape frame of the Falls. At first thought it would seem rather inconvenient for everyone doing business in the office to climb a long flight of stairs, or make a detour of several hundred feet by road; but the proximity to the town, the shortness of the walk from the car line, and the good light and air available on this site would probably make it more satisfactory than one to the southeast of the Falls, especially if the latter were made really unobtrusive by keeping it at a distance from the main drive and the car track by screening it in against the wooded bank by new plantations. It would not be a

difficult or a very costly thing to install an escalator in one of the gulleys leading to the plateau, thus overcoming the only important objection to the site.

In this location on the plateau an administration building, instead of being classed as an unavoidable injury to the park landscape, would contribute substantially to the protection of the scenery by removing from private ownership a piece of land which could easily be made available for factories or conspicuous advertising device. If one pictures for a moment the result of duplicating on the brink of this commanding and conspicuous plateau such an atrocious-looking industrial district as that upon the less prominent American side of the Gorge below the bridge, he cannot fail to realize the strength of the argument for getting this land into the control of the Commission.

Upon the whole, I strongly advise this plateau site for the administration offices.

2. Provision for Games and Amusements.

To what extent it is properly a duty of your Board to provide space for games and amusements of a sort which can be carried on as well in any other locality as they can along the margins of the great cataract, is a question not readily answered. If unlimited means were available, a great deal of valuable public service might be rendered in this way incidentally to your primary duties as guardians of the Falls. But even with unlimited funds, it is clear that such services should be provided only in such a way and in such places as will not impair in the slightest degree any of the conditions which enhance the appreciation by visitors of the natural scenery of the Falls. Your Board ought to be extremely cautious in this matter, and ought to keep in mind this historical fact, viz.: Practically every Park Commission which has under its care one or more parks, valuable chiefly for their landscape, has been subjected to an endless succession of demands—based upon worthy motives, plausibly argued, and difficult to resist—for the introduction of features good in themselves but sufficiently inharmonious with the scenery to make their cumulative effect disastrous if enough of the demands are met. Sometimes it is wholly impossible to resist such a demand, and it has been found desirable to provide, in connection with parks where the landscape is very precious, certain areas apart from the general landscape where miscellaneous incidental park services can be carried on without too great a sacrifice.

The field between the suggested administration offices on the upper plateau and the railroad would form an excellent safety valve of this sort, a sort of open common for the use of those visitors seeking outdoor recreation of a sort wholly unconnected with the scenery of Niagara. Its proximity to the station where excursion parties leave and take the train is a distinct advantage for such use.

3. Location of Proposed Number 3 Overflow Structure.

I was asked for my impression in regard to the effect upon the park of the proposed Number 3 overflow structure in various alternative locations. My impression is strongly that the site hitherto approved by your Board is less objectionable than any of the alternative sites.

4. Aerial Cableway at the Whirlpool.

My opinion was asked in regard to the erection of a shelter building over the northerly station of the cableway. The whole installation having been unfortunate in its conception, and having been executed with a deplorable lack of intelligent regard for the scenery, the only thing now to be done is to add nothing more to its

Vista at Usher's Creek, Niagara River Boulevard.

Primula Florifunda, "Milky Way," originated at Queen Victoria Park Conservatories.

conspicuousness in the landscape. I should distinctly prefer to omit any shelter above the present platform, and to so arrange the grading and planting as to obscure it from sight as much as practicable. A refuge for the public in case of storm, with suitable sanitary accommodations, can be provided much less conspicuously near the present temporary wooden shelters, where there is a natural screen of foliage.

If, notwithstanding the opinion expressed above, a roofed shelter is to be erected on top of the concrete deck, it ought to be low and of the simplest form, merely a hipped shingle roof supported by simple rubble masonry piers. The various designs which were shown to me as having been submitted by the concessionaires are thoroughly inappropriate and in very bad taste.

5. Forest Conditions in Niagara Glen.

My attention having been called to the general appearance of the vegetation in Niagara Glen more closely than at the time of my visit two years ago, I was even more impressed than at that time by the unhealthy condition of the woodland. There is certainly an abnormal amount of dead and dying timber, and of gaps caused by previous losses. In far too many places the general appearance is suggestive not of a typical native forest, perennially renewing itself as the death of one tree makes room for its more vigorous competitors, but of a gradually failing remnant.

My opinion was asked as to the advisability, as a matter of scenic improvement, of removing some of the standing and leaning dead trees and fallen deadwood, which help to give this depressing effect. A moderate amount of such removal, very cautiously done under the constant personal direction of a man of artistic discretion, would improve the appearance of the woodland for the time being. But if done without sufficient restraint and constant skilled supervision, the results would be bad and irremediable for many years. And, after all, such removal of dead stuff is a superficial treatment of symptoms. The important thing is to ascertain the causes and to remove them. Or, if they are unavoidable, decide what is the best that can be done under the circumstances, and take the necessary steps to attain it successfully.

The causes of such a decadent condition in woodlands are generally very complex. In my report of two years ago I mentioned one that was plainly at work in certain places, the wear and tear of trampling upon the roots. But that operates only in a few limited places, and does not account for the general condition. At this visit, looking further and more closely, I observed that one of the commonest important causes of the decadence of woodlands has largely affected Niagara Glen —namely, fire. I doubt if there was an acre in the region through which I walked in which I did not find some clear evidence of fire. Charred stumps and sticks are to be seen here and there, and many of the dead and of the sickly trees show evidence of just the kind of injuries which ordinarily result from the scorching of the bark by fire. Fires which are not hot enough to kill trees outright, ordinarily do immensely more damage than appears upon the surface, chiefly by cooking the inner bark in spots and streaks, causing it to rot gradually from the inside, interrupting the flow of sap and lowering the entire vitality of the tree during a long series of years. One white cedar into which I cut showed evidence of a bad fire scar at least fifteen years before the final death of the tree. A large part of the decadent condition of the woodland may be due to fires which took place more than fifteen years ago, but others have occurred more recently.

Too much emphasis can hardly be placed upon the importance of guarding against even very small fires. It is difficult for any one who has not investigated the subject carefully to realize the amount of damage to trees which is apt to result in the course of a few years from fires that seem at the time wholly insignificant. I would urge upon you, therefore, the utmost liberality, first, in providing suitable equipment and organization for promptly putting out every fire that may start anywhere on the property, but especially in the wilder woodland spots which are most difficult of access, and where the damage is likely to be worst; and, second, in providing for thorough and unremitting patrol by watchmen at those seasons when fires are most apt to start. A good patrol system with sufficiently frequent telephone stations for calling help, and a properly selected and well-distributed equipment of chemical extinguishers and tools are of basic importance.

With such precautions, damage by fire can be practically eliminated, and if past fires are the only important causes of the enfeebled condition of the woods, the damage will gradually repair itself in the course of the next century. This slow recovery can be assisted by the planting in of seedling native trees in those of the thin places where suitable young growth is not already coming up spontaneously. The most important species to plant are probably hemlock, white cedar, white pine, basswood, and the native birches, oaks, and ash.

But it is worth while making a much more detailed and careful investigation in order to determine whether there are, in addition to fires, any other factors, such as plant diseases and insects attacks, which have been seriously affecting the health of the woodlands, against which special measures ought to be taken, or which might affect the choice of the species of trees to be encouraged. A man with a thorough working knowledge of forest entomology and of forest tree diseases, ought to be called in to make a careful examination. It is to be hoped that he would find no serious infestations except such as inevitably follow in the train of injury by fire; but the woods are too valuable and their condition too much impaired already to take any chances on such matters.

Respectfully submitted,

FREDERICK LAW OLMSTED.

MEMORANDUM OF AGREEMENT made this 11th day of January, 1916.

BETWEEN:

THE COMMISSIONERS FOR THE QUEEN VICTORIA NIAGARA FALLS PARK, hereinafter called "The Commissioners,"

Of the First Part,

—and—

THE CARTER ELECTRIC COMPANY OF THE CITY OF NIAGARA FALLS, hereinafter called "The Company,"

Of the Second Part.

The Company hereby covenants and agrees with the Commissioners to furnish all of the material and labor necessary to complete an alteration in the lighting system of Queen Victoria Park, now installed upon the trolley poles of the International Railway Company from Clifton Incline to the Dufferin Islands, to the satisfaction and under the direction of the Superintendent of the Park. The work is to consist of taking down in good order the hoods and lights of the present fixtures to the end of the goose neck, and the erection of two hundred copper holders with spring clip as per sample marked "2," the erection of two hundred, three light Benjamin clusters with nipples complete as per sample marked "3," the supply and placing of six hundred forty watt Sunbeam tungsten lights, and the supply and erection of two hundred opaque globes as per sample marked "1." The work to be completed by March 18th, 1916.

The Company further agrees that all of the material taken from the present fixtures is to remain the property of the Park Commissioners, all proper care being taken to preserve it against breakages.

The Company further agrees to perform the work herein provided for under the direction of the Inspection Department of the International Railway Company, and conform to the directions of the Company in all matters affecting its property.

The Company further agrees to make a complete and workmanlike job, and do the same in accordance with the rules and regulations of the Hydro Electric Power Commission of Ontario and produce a certificate of inspection from the Commission's Inspector.

In consideration of the premises, the Commissioners agree to pay to the Company the sum of Ten hundred and twenty-five and 50-100 Dollars on the basis of one hundred poles fully equipped with two clusters of lights to each pole.

IN WITNESS WHEREOF the party of the Second Part has hereunto set his hand and seal in the year first above written, and the party of the First Part has hereunto affixed its corporate seal under the hand of P. W. Ellis, Esquire, its proper officer.

SIGNED, SEALED AND DELIVERED
in the presence of

W. J. SEYMOUR.

P. W. ELLIS.
R. F. CARTER ELECTRIC CO.,
F. W. CARTER, *Mgr.*

THIS INDENTURE made (in triplicate) this 27th day of June, A.D. 1916,

BY AND BETWEEN:

THE COMMISSIONERS FOR THE QUEEN VICTORIA NIAGARA FALLS PARK, hereinafter called "The Commissioners,"

Of the First Part,

—and—

T. W. MIDFORTH, of the City of Niagara Falls, Merchant, hereinafter called "The Lessee,"

Of the Second Part

WITNESSETH that in consideration of the rents, covenants and agreements hereinafter reserved and contained on the part of the Lessee to be paid, observed and performed, the Commissioners demise and lease unto the Lessee the sole and exclusive right and privilege of offering for sale refreshments and souvenirs, and also the right and privilege of taking photos of visitors, or of exposing photos of scenery, etc., for sale within the limits of Queenston Heights Park, which rights and privileges are subject to the following conditions and stipulations:

(1) The sale of refreshments and souvenirs at Queenston shall be confined to the pavilion east of Brock's Monument, and the building adjoining the tracks of the International Railway on the easterly side thereof, presently used for the purpose, and at no other point. The sale of photos shall be confined to the building at the Laura Secord Monument, presently used for the purpose, and at no other point.

(2) The persons employed by the Lessee coming in contact with the public shall be neatly dressed, and if their conduct, or the conduct of any other person employed by the Lessee, shall be such as to be disapproved by the Superintendent, the Lessee shall forthwith dismiss such person from his employment upon being required to do so by the Superintendent.

(3) All the business shall be conducted in a quiet and orderly manner, and to the satisfaction of the Park Commissioners at all times.

(4) The Lessee and all his employees shall at all times conform to any and all rules and regulations which may be promulgated by the Board of Commissioners, from time to time for the government of the Park.

(5) The Lease shall extend over the period from January 1st, 1916, to January 1st, 1917, and then be fully completed and ended, proviso for re-entry by the Commissioners on non-payment of rent or non-performance of covenants.

(6) The Lessee shall provide all the dishes and other requisites necessary to conduct the business of supplying refreshments in a proper manner, and shall also provide a modern high class photographic outfit for the taking of photographs of visitors to the Park.

(7) The Lessee shall provide means for disposing of all garbage and refuse in a proper and efficient manner, and to the satisfaction of the Park Superintendent.

(8) The Lessee covenants and agrees during the currency of this lease to pay rental as follows: the sum of five hundred ($500) dollars on the first day of August, the sum of five hundred ($500) dollars on the first day of September,

together with five (5) per cent. of the gross receipts amounting to $8,000 and over, derived by the Lessee from all sources connected with the business to be carried on by the Lessee, as such Lessee, payable in the following manner: Five per cent. of the gross receipts received by the Lessee during the term of the said lease, dating from the first day of January, 1916, and payable on the first day of December, 1916, amounting to $8,000 and over. The Lessee covenants with the Commissioners that he will keep such books and in such form as the Superintendent shall from time to time prescribe, and will therein in such manner and in such detail as the Superintendent shall direct at the close of each day during said term enter fully, truly and correctly the amount of the said gross receipts received by him as aforesaid on each day, and that he will produce said books in the office of the Commissioners in the Park and allow the Superintendent or any other person authorized by the Commissioners to examine said books whenever and as often as requested by the Superintendent or the Commissioners so to do.

The Lessee further covenants that he will during said term deposit the total receipts for each day at latest on the succeeding day (or on the next banking day) in a bank in a separate account, and will always keep an amount equal to the five per cent. payable to the Commissioners in said account, and will produce said bank book at said office for inspection when requested by the Superintendent or other person authorized by the Commissioners to inspect same.

(9) The Lessee covenants with the Commissioners to pay all Municipal taxes or school rates which may be legally chargeable against him by reason of his occupation of the premises in manner and form hereby demised.

(10) It is hereby declared and agreed that this Agreement shall enure to the benefit of and be binding upon the successors of the Commissioners and the heirs, executors, administrators and assigns of the Lessee, as well as the Commissioners and the Lessee.

IN WITNESS WHEREOF the parties of the First and Second Parts hereunto have set their hands and seals on the day and year above written.

Attest:
JOHN H. JACKSON.

T. W. MIDFORTH.

COMMISSIONERS FOR THE QUEEN VICTORIA NIAGARA FALLS PARK.

P. W. ELLIS,
Chairman.

THIS INDENTURE made (in triplicate) this 27th day of June, A.D. 1916.

BY AND BETWEEN:

THE COMMISSIONERS FOR THE QUEEN VICTORIA NIAGARA FALLS PARK, hereinafter called "The Commissioners,"

Of the First Part,

—and—

A. BROOKER, of the City of Niagara Falls, Merchant, hereinafter called "The Lessee,"

Of the Second Part.

WITNESSETH that in consideration of the rents, covenants and agreements hereinafter reserved and contained on the part of the Lessee to be paid, observed and performed, the Commissioners demise and lease unto the Lessee the sole and exclusive right and privilege of offering for sale refreshments and souvenirs, and also the right and privilege of taking photos of visitors, or of exposing photos of scenery, etc., for sale within the limits of Whirlpool Point, which rights and privileges are subject to the following conditions and stipulations:

(1) The sale of refreshments and souvenirs at Whirlpool Point shall be confined to the building presently used for the purpose, or at such other point to be designated by the Superintendent of the Park, and at no other point.

(2) The persons employed by the Lessee coming in contact with the public shall be neatly dressed, and if their conduct, or the conduct of any other person employed by the Lessee, shall be such as to be disapproved by the Superintendent, the Lessee shall forthwith dismiss such person from his employment upon being required to do so by the Superintendent.

(3) All the business shall be conducted in a quiet and orderly manner and to the satisfaction of the Park Commissioners at all times.

(4) The Lessee and all his employees shall at all times conform to any and all rules and regulations which may be promulgated by the Board of Commissioners, from time to time for the government of the Park.

(5) The Lease shall extend over the period from January 1st, 1916, to January 1st, 1917, and then be fully completed and ended, proviso for re-entry by the Commissioners on non-payment of rent or non-performance of covenants.

(6) The Lessee shall provide all the dishes and other requisites necessary to conduct the business of supplying refreshments in a proper manner, and shall also provide a modern high class photographic outfit for the taking of photographs of visitors to the Point.

(7) The Lessee covenants and agrees during the currency of this lease to pay rental as follows: the sum of fifty ($50.00) dollars on the first day of August, and in addition to said rent, as additional rental, yielding and paying therefor of the gross receipts for the year derived from or in connection with the said privileges above $500 and up to $1,000 ten per cent. (10%), and of the gross receipts for said year above $1,000 and up to $1,500, fifteen per cent. (15%), and of the gross receipts for said year above $1,500 and up to $2,000, twenty per cent. (20%), and of the gross receipts for said year above $2,000, twenty-five per cent. (25%).

On the first day of August and December of said year, the Lessee covenants and agrees to deliver to the Lessors, a statement showing the gross receipts of the Lessee during the preceding quarter, and shall at the same time pay to the Lessors whatever percentage of the gross receipts such statement shall show the Lessors shall be entitled to over and above the said minimum rent.

The Lessee covenants with the Commissioners that he will keep such books and in such form as the Superintendent shall from time to time prescribe, and will therein in such manner and in such detail as the Superintendent shall direct at the close of each day during said year enter fully, truly and correctly the amount of said gross receipts received by him as aforesaid on each day, and that he will produce said books in the office of the Commissioners in the Park, and allow the Superintendent or any other person authorized by the Commissioners, to examine said books whenever and as often as requested by the Superintendent or the Commissioners so to do.

And the Lessee further covenants that he will, during said term, deposit the total receipts for each day at latest on the succeeding day (or on the next banking day) in a bank in a separate account, and will produce said bank book at said office for inspection when requested by the Superintendent or other person authorized by the Commissioners to inspect same.

(8) The Lessee covenants with the Commissioners to pay all Municipal taxes or school rates which may be legally chargeable against him by reason of his occupation of the said premises in the manner and form hereby demised.

(9) It is hereby declared and agreed that this Agreement shall enure to the benefit of and be binding upon the successors of the Commissioners and the heirs, executors, administrators and assigns of the Lessee, as well as the Commissioners and the Lessee.

IN WITNESS WHEREOF the parties of the First and Second Parts hereunto have set their hands and seals on the day and year above written.

Attest:

HENRY J. MOORE,
JOHN H. JACKSON.

A. BROOKER.

COMMISSIONERS FOR THE QUEEN VICTORIA NIAGARA FALLS PARK,

P. W. ELLIS, *Chairman.*

POWER COMPANY RETURNS IN AVERAGE HORSE-POWER.

Canadian Niagara Power Co.		Ontario Power Co.		Electrical Development Co.	
Half-year ending.	Horse-power.	Half-year ending.	Horse-power.	Half-year ending.	Horse-power.
1906—Apr. 30	12,206	.....	.....	.....	.....
Oct. 31	12,552	.....	.....	.....	.....
1907—Apr. 30	20,523	.....	.....	.....	.....
Oct. 31	29,698	.....	.....	.....	.....
1908—Apr. 30	29,867	1908—Mar. 31	13,535	1908—Jan. 31	11,324
Oct. 31	34,696	Sep. 30	20,177	July 31	13,204
1909—Apr. 30	35,502	1909—Mar. 31	32,192	1909—Jan. 31	13,575
Oct. 31	40,441	Sep. 30	28,826	July 31	18,212
1910—Apr. 30	46,613	1910—Mar. 31	47,421	1910—Jan. 31	17,579
Oct. 31	47,157	Sep. 30	45,023	July 31	18,863
1911—Apr. 30	48,027	1911—Mar. 31	54,765	1911—Jan. 31	22,157
Oct. 31	43,583	Sep. 30	55,876	July 31	20,419
1912—Apr. 30	50,183	1912—Mar. 31	70,272	1912—Jan. 31	21,531
Oct. 31	49,716	Sep. 30	73,899	July 31	26,787
1913—Apr. 30	53,608	1913—Mar. 31	91,180	1913—Jan. 31	34,458
Oct. 31	60,771	Sep. 30	97,620	July 31	33,398
1914—Apr. 30	64,187	1914—Mar. 31	107,740	1914—Jan. 31	40,843
Oct. 31	60,067	Sep. 30	116,385	July 31	29,059
1915—Apr. 30	58,312	1915—Mar. 31	124,134	1915—Jan. 31	45,377
Oct. 31	60,483	Sep. 30	114,717	July 31	46,023
1916—Apr. 30	65,200	1916—Mar. 31	134,324	1916—Jan. 31	65,355
Oct. 31	69,992	Sep. 30	143,523	July 31	89,045

QUEEN VICTORIA NIAGARA FALLS PARK

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Ontario. Legislature Assembly
Sessional papers.

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3 maps to accompany
Sess. pprs. No. 4, 1917

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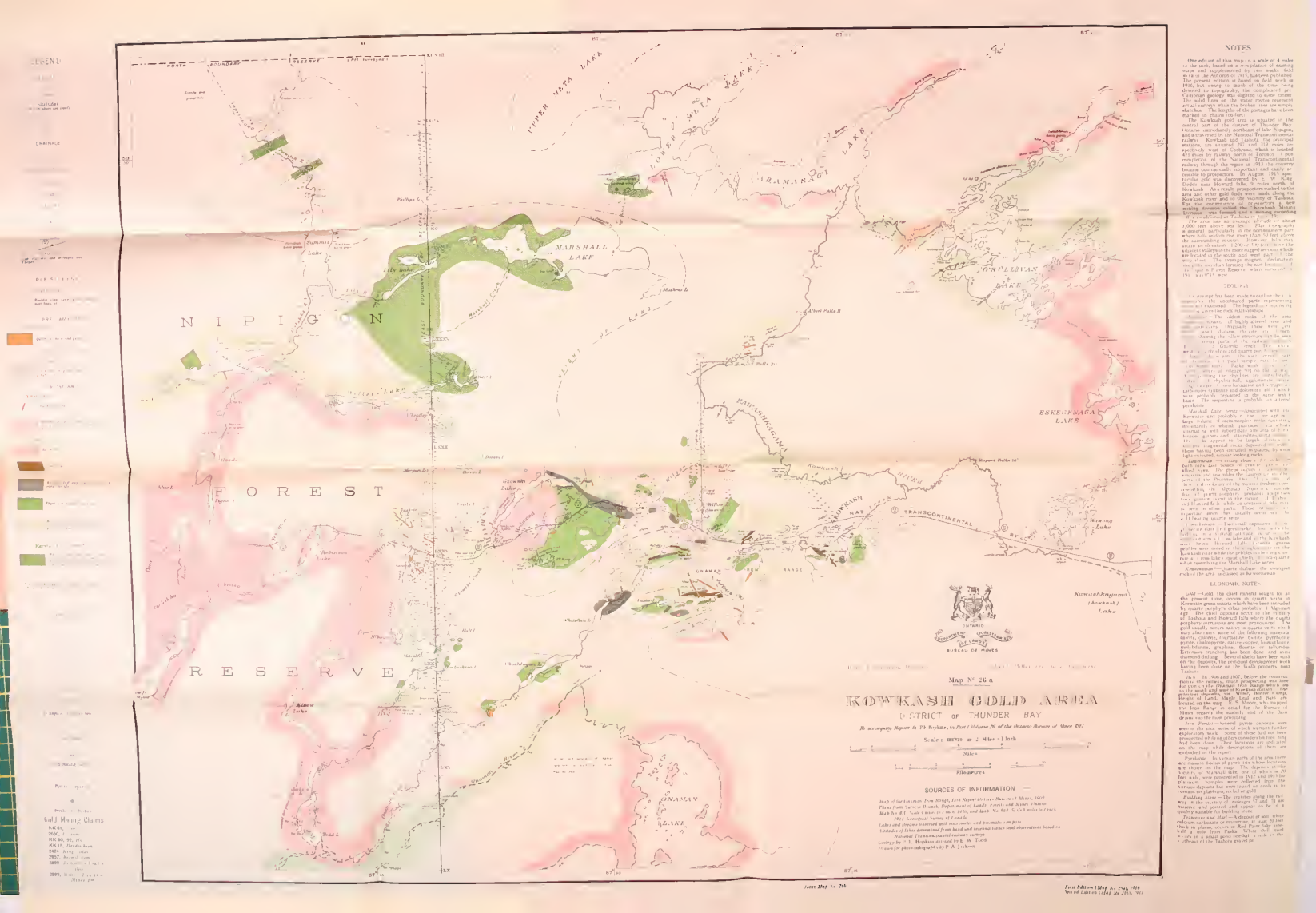
Sessional papers.

Vol. 49, pt. 2, 1917

Map No. 26b

~~to~~ accompany
Sess. pps. No. 41, 1917


NOTES
LEGEND
GEOLOGY
ECONOMIC NOTE
SOURCES OF INFORMATION
Gold Mining Claims
NIPIGON
FOREST
RESERVE
MARSHALL LAKE
SULLIVAN LAKE
ESKEEPNAGAA LAKE
KAWASHAGAMA LAKE
KOWKASH RIVER
TRANSCONTINENTAL RY.
ONAMAN LAKE
Kowkashagama Lake
Map No 26 a
KOWKASH GOLD AREA
DISTRICT OF THUNDER BAY
Scale: 1 Mile = 1 Inch
Miles
Kilometres
BUREAU OF MINES

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Map No. 26 e
to accompany
Sess. ppr. No. 4, 1917

PROVINCE OF ONTARIO

Map No. 1a

SURFACE DETAILS OF

LONG LAKE GOLD MINE AND VICINITY

DISTRICT OF SUDBURY

Compiled from Report of M. B. Baker, in O. B. M. 1941, Part I, 11K, and Surveyor's Map

Scale 1/600 or 10 chains = 1 inch

Map 26 a.

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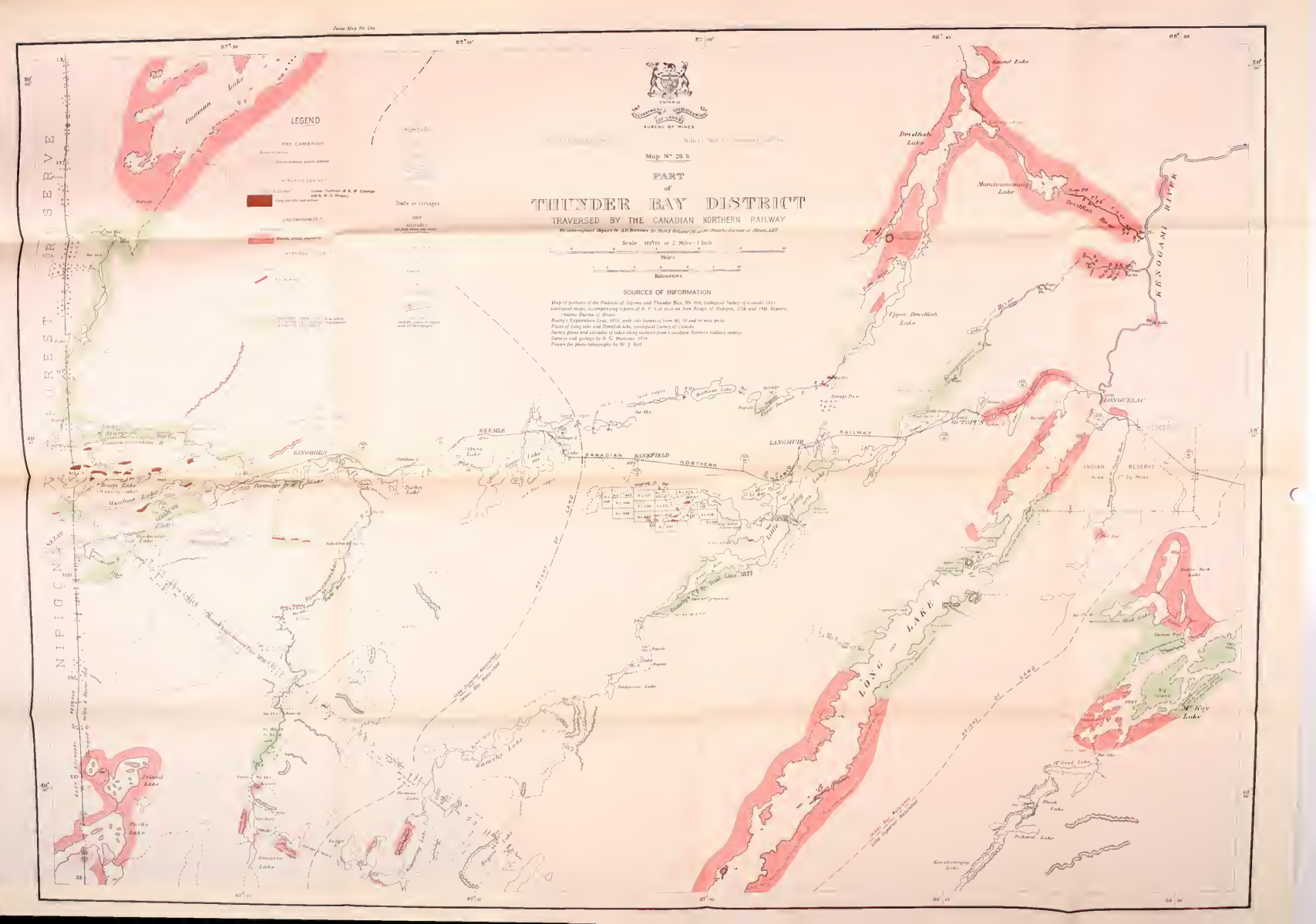
(Sess. pap. 4, 1917)


ONTARIO
DEPARTMENT OF MINES
BUREAU OF MINES
Map N° 26 b
PART
of
THUNDER BAY DISTRICT
TRAVERSED BY THE CANADIAN NORTHERN RAILWAY
Scale 1/6720 or 2 Miles = 1 Inch
Miles
Kilometers
SOURCES OF INFORMATION
LEGEND
PRE CAMBRIAN
Symbols
Drake or Intrusives
Alluvium
Kaministiquia River
Kenogami River
Dorothea Lake
Manitouwadjuan Lake
Upper Dorothea Lake
Longuelac
Lake Nipigon
Nipigon Forest Reserve
Kinghorn
Keemle
Lansmith
Canadian Northern Railway
Canadian Pacific Railway
Indian Reserve
Long Lake
Gamay Lake
Island Lake
Parks Lake
Granite Lake
Big Island
Mc Kay Lake
Black Lake
Pritchard Lake

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